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BRITISH COLUMBIA TIMBER LANDS

THE first annual report of the Forest Branch of British Columbia has appeared, incorporated with the large volume issued by the Minister of Lands. The work is an exhaustive one and a splendid tribute to the energy of the Honourable W. R. Ross, and the technical staff he has picked to administer the vast forest resource of the Pacific Province.

British Columbia has a wooded area which produces annually, according to a general estimate recently made, five times as much as is cut. The wise development of the whole timber growth and its protection from fire are the objects of the forestry movement now afoot in this Province. The most important portion of the work is the safeguarding of the merchantable timber already standing and the Chief Forester devotes the bulk of the report to a consideration of the ways and means of fire protection.

When the Branch was established last summer, the fire patrol force had already taken the field, and it was therefore inadvisable to make radical changes in its methods of organization. Consequently, the season's work was carried out under existing conditions. The work was remarkably successful in view of the small number of wardens employed, the weather being very favorable and only \$300,000 damage being done to the standing timber. A great deal of damage to young growth which cannot be calculated in figures should be added to the foregoing estimate, since the area burned over was no less than 116,000 acres.

There were 347 fires reported altogether. The cost of patrol and fighting fire to Government and private companies and individuals aggregated \$278,-

647. This does not include the money spent by the railroad companies in patrol along their tracks and by private timber owners in building trail and telephone lines in their holdings.

Over 9,400 permits for the burning of brush in land clearing were issued, and it is gratifying to note that only eight fires escaped, a result that shows that greater care is being exercised in slash burning.

The regular force of fire wardens in the past season consisted of 165 men, whose efforts were augmented during the most dangerous season by 48 special patrolmen.

The total area included within the sixteen fire divisions of the Province which were organized was about 125,000,000 acres, of which it is estimated that about 80,000,000 to 100,000,000 acres are covered with some kind of timber, and 50,000,000 to 65,000,000 acres are real forest land, covered with mature timber or valuable second growth.

The area patrolled last year averaged about 900,000 acres to each patrolman.

The railways, both those operating and those under construction, responded most satisfactorily to the requests of the Provincial Forest Branch and the Board of Railway Commissioners, and gave attention to clearing debris from their rights of way and to their patrol.

The Chief Forester observes that in the nature of the country it is almost impossible to extinguish fires in many parts of the Province without some means of getting men quickly on the ground. To this end trails, telephone lines, tool caches, and ranger cabins are absolutely necessary. He regards a total length of 295 miles of telephone lines and 163 miles of trail as indispensable for the coming year, and urges for



15,000 FEET PER ACRE, MERCHANTABLE LENGTH 100 FEET, COAST DISTRICT.



YOUNG YELLOW PINE ON LOGGED-OVER LAND, EAST KOOTENAY, WHERE FIRE HAS BEEN KEPT OUT.



BROAD VALLEY OF LOWER END OF TSAYTABAT LAKE, NATION LAKE DISTRICT, HEAVILY FORESTED WITH SPRUCE.

construction in the very near future an additional 1,020 miles of telephone line. Work on cabins and tool caches is to begin almost immediately. Already bids have been asked on six launches for coast patrol and two for the Kootenay and Arrow lakes.

The creation of forest reserves in which permanent improvements for the protection and harvesting of the timber can be made, is strongly recommended. In many districts these reserves are of most consequence for their influence in equalizing the flow of water needed for irrigation.

One of the most important duties of the Forest Branch is to investigate the lands which are supposed to be covered with timber and to report upon those which are more fit for agricultural crops than for trees. To this end, and to secure accurate data upon the extent of timber, the necessity for permanent improvements, etc., there were placed in the field last year twelve parties of reconnaissance surveyors, who covered about 4,700 square miles, and are now sending in their returns to Victoria.

The timber of the Province has been

reserved from alienation since 1907, but under the new forest act of 1912, timber sales are being made on forest areas that have been cruised and surveyed for that purpose.

As yet only a beginning has been made, but nevertheless the sales already in hand will yield in royalty, upset price, and rental, about \$176,000 to the Government.

During the year the Government scalers scaled 1,105,393,751 feet board measure of timber exclusive of that cut on lands. Crown granted prior to 1887, on which one cent a foot is charged.

The total forest revenue for the year was \$2,753,579. Included in this are the rentals of special licences, amounting in all to \$1,846,000.

The Government expenditure, including the amount that constitutes the Government's half of the Forest Protection Fund, was \$278,647. To this should be added the half of that fund contributed by licencees, and lessees of Crown lands and owners of Crown Grant timber, and railway companies amounting to a further \$127,570.

That is to say, the amount paid out

from the public revenue of the Province for the protection and management of the provincial forests was one-tenth of the total revenue received. The report points out further that out of every four dollars coming into the Provincial Treasury one is from the forest.

The Chief Forester has had a busy winter. In addition to correspondence and all the necessary organization along all lines, and the necessary readjustments under the changed conditions of management, there has been a great amount of legislative work to demand attention. The matter of timber royalties, which have remained unaltered for over twenty-five years, was brought up in the Legislature, and there were large deputations of lumbermen from the coast and the Interior to present the timberholders' and manufacturers' view to the Minister. The fixing of royalties was left over for a year by the Legislature, but all the other amendments to the Forest Act, concerning licences, fees, timber marking, export and forest protection were passed and incorporated in the laws of the Province.

Outside of the usual routine matters

the office of management has been engaged principally in the matter of timber sales, which have been instituted in place of the method of disposal of timber by staking and license in use before the embargo was placed on alienation in 1907. Bids are coming in on fourteen sales, and already fourteen sales have been made, which will return the Government \$176,000.

The Chief of Management will find his duties of office continually more pressing, and it will be necessary for him to be absent from the head office for considerable periods, principally on the work of cruising and examining large areas of timber on the coast. A total of 60,000 acres of pulp timber has been applied for the coast pulp companies. Some of this has been logged over, and some of it examined for sale. The remainder will be cruised to determine whether or not it should be held. The valley of the Kitimat will be examined for purposes of separation of agricultural from non-agricultural land. Mr. Lafon has also the task of building up an adequate cruising force, and it will be necessary to devise a suitable set of regulations governing fire protection to



TYPICAL VIEW OF VALLEY OF FRASER RIVER, VICINITY OF TETE JAUNE CACHE. ORIGINALLY COVERED WITH HEAVY STAND OF TIMBER WHICH WAS DESTROYED BY FIRE FIFTY OR SIXTY YEARS AGO. GOOD AGRICULTURAL LAND.



SLASH AFTER LOGGING OPERATIONS PREPARES GOOD SEED-BED FOR DOUGLAS FIR AND REMOVES FURTHER FIRE DANGER.



WESTERN RED CEDAR, WET BELT, WEST KOOTENAY.



DRIVE OF CEDAR, FIR, AND YELLOW PINE LOGS, SLOCAN RIVER.

apply in cases where logging is to be completed in from one to four years. These regulations will necessarily take into account market conditions, logging costs, and other factors. As soon as the Department is fully informed on these points the framing of regulations will proceed.

There must be certain changes in methods of scaling, and it is probable that there will be held examinations for scalers and that none will be allowed to practice without a license from the Department.

The officer in charge of fire protection, is at present making an extensive tour of the province, for the purpose of organizing the fire protective districts. Rangers have been appointed, and by the advent of the dangerous season the great part of the province will be under careful supervision. It is expected that this will be one of the most difficult seasons ever encountered on account of the heavy growth of grass last summer and the drought which it is thought will prevail. Logging operations and right-of-way construction have been general throughout the province, and it will be a great problem to keep fire from

spreading from slashing into some of the greatest timber areas.

Fire protection is the one important work of the Forest Branch this year. The machinery and equipment is not at all complete; trails need to be built and telephone lines constructed.

Work in forest survey has been the compilation of reports on the reconnaissance work of the past summer. During the coming season there will be carried on the same arrangement as before with the Surveyor-General of the Province, and at least one forest officer will accompany the regular exploration practice in the far north of the Province. From 1,500 to 2,000 miles is to be covered in this way in the Parnip River, Peace River, Groundhog, Naas, and possibly Queen Charlotte Districts.

There will be undertaken in the near future a survey and cruise of the line of the Canadian Northern Pacific, the construction of which has rendered very valuable a great amount of timber. This will be sold and the land from which it is cut opened up to settlers.

There will be made also a survey of a strip three miles broad along the line



LOGGING OPERATIONS IN KOOTENAY VALLEY. NOTE SMALL LOGS USED.

of the G. T. P. between Fort George and the Alberta boundary.

The Province has been organized into eleven forest districts, each in charge of a District Forester, who will control all timber inspection, revenue collection, fire protection, establishment of permanent improvements and the supervision, under the general direction of the head office, of any cruising and reconnaissance work which may be carried on in his district. The vesting of permanent responsibility in local centers will free head office of many small cares and will develop efficiency and satisfaction in administration of local affairs.

While many considerations have combined to move the officers of the Forest Branch to divide up the province into the particular administrative units now being organized, it is noticeable that these areas lie in fairly uniform and definite relation to the main railways of the country. In the south, from east to west, the Cranbrook, Nelson and Vernon Districts lie along the new branch of the C. P. R. running through the Kettle Valley to Vancouver. North of these districts is the railway belt, administered by the Federal Government. Paralleling this in a row to the

north again are the provincial divisions Tete Jaune Cache, Kamloops, Lillooet and, at the coast, the Vancouver District. The Tete Jaune Cache district has running through it both the C. N. P and the G. T. P., the latter reaching to the north in its course down the Fraser River. The Fort George, Hazelton and Prince Rupert districts lie along the great new transcontinental. The Vancouver Island district is, of course, separate.

The Cranbrook (7,325,000 acres), and Nelson (5,259,000 acres) districts, lying the one to the east, the other to the west of the Selkirk mountains, are very rough and broken. Timber is found to a height of 6,000 feet. The cold mist climate of the mountains gives rise to the balsam-fir-spruce forest, while the dry, hot, broken lowlands support the typical yellow pine type.

There is abundant means of transportation, principally by the waterways and the numerous trails made by the early prospectors. There is considerable railway development, which forms at once one of the prime assets of the country and one of the great sources of danger.



CONTRACTORS CONSTRUCTING RAILROADS THROUGH TIMBER LANDS
IN BRITISH COLUMBIA ARE REQUIRED TO BURN ALL SLASH ON
RIGHT-OF-WAY.

The immense forest fires which have devastated vast areas in these districts have been caused largely by the railways. Prospectors and a general careless use of fire in land clearing and traveling have also contributed largely to the broadcast destruction.

However, logging in these districts is the most important of all industries and is second in magnitude to the Vancouver district only. Great quantities of fir are annually cut and shipped to the prairie market. Stumpage is much higher than in other parts and close utilization of products is much more highly developed than elsewhere.

The main problem from the standpoint of administration is fire protection. The large number of small mills scattered through the mountains create widespread risks which the length and dryness of the summer seriously augment.

In the past few months there has been carried on by Messrs. G. H. Prince and A. M. O. Gold extensive reconnaissance in the Cranbrook district. The former cruised several thousand acres

of timber for sale, and made recommendations as to the disposal of a large amount of fire-killed timber, which it was thought might be salvaged. Mr. Gold examined about 400 square miles in the Kootenay valley and gathered information regarding the stands of timber.

With the organization of the district, Mr. J. D. Gilmour has been placed in charge, and Mr. Prince remains to assist him. Outside of fire protection, to which great attention will be given, there is to be undertaken extensive land classification.

In the Nelson district there has been made an examination for the purposes of land classification. Mr. J. R. Martin is to assume the responsibilities of District Forester, assisted by Mr. T. H. Plumer. Fire protective organization, with inspection and possibly some special investigations, will occupy the officers for the next few months.

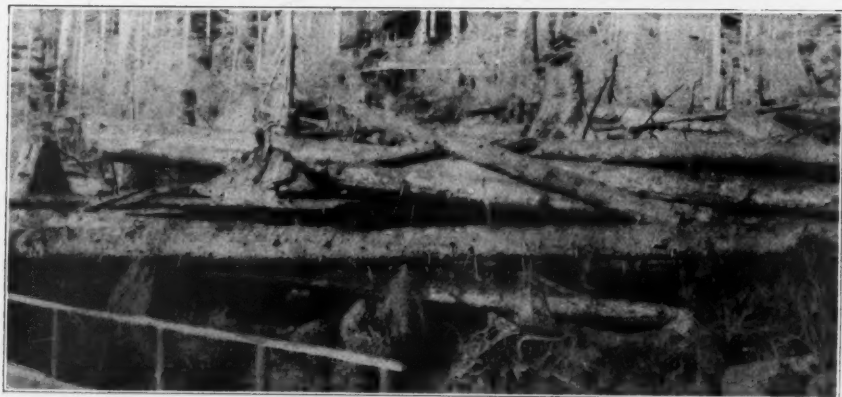
The Vernon district lies west of the Gold Range and comprises 6,963,000 acres in the valleys of the Okanagan and Kettle rivers. It is semi-arid, and



COAST TIMBER FELLED AND BUCKED, READY FOR THE DONKEY-ENGINE.



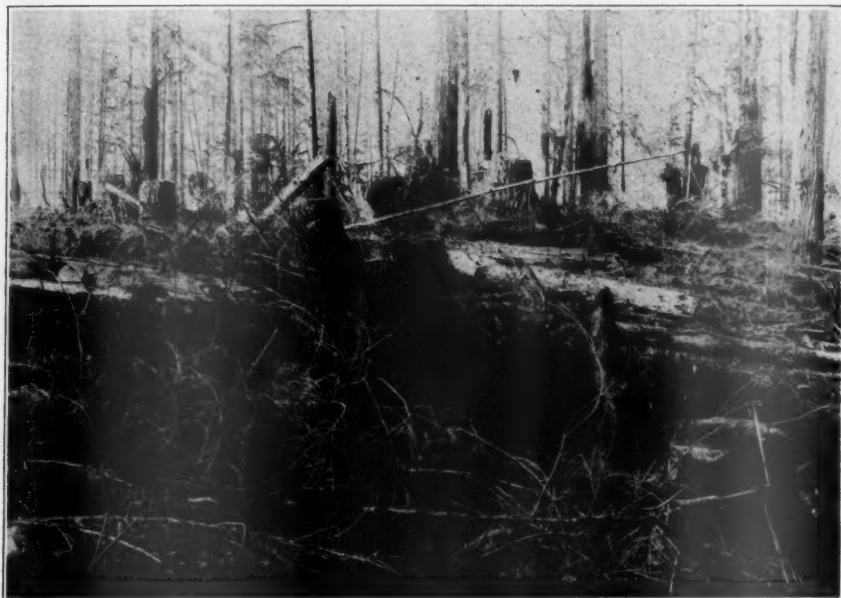
ROLLWAY, YELLOW PINE LOGS, KOOTENAY VALLEY.



DANGEROUS SLASH LEFT ALONG ELECTRIC POWER TRANSMISSION RIGHT-OF-WAY.



OPEN REFUSE-BURNERS ARE FREQUENT SOURCES OF FOREST FIRES.



SLASH LEFT AFTER LOGGING ON THE COAST IS CONSTANT SOURCE OF FOREST FIRES.

consists of a series of great plateaus broken by numerous lakes. The timber is heavy in places and the fire risk is everywhere very great. The forest is looked upon as the great co-operative factor in the production of the world-famous Okanagan fruit, and ranchers in the district are very anxious to have the watersheds adequately protected from fire. Consequently, to Mr. L. H. Andrews, who has been placed in charge of the district, there will fall a great deal of heavy fire protective work, particularly in the northern part of the district, where the timber is heavy and the dangers wide-spread. In the southern portion the grazing question is likely to assume importance.

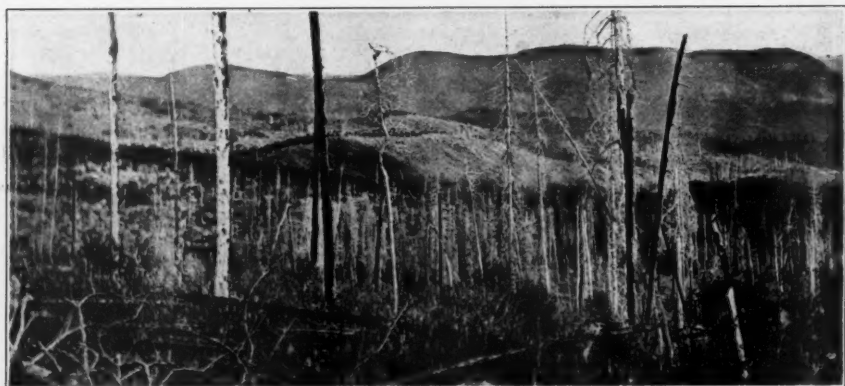
In the past winter railway construction up the Kettle Valley has made the work of inspection of cutting and fire risks very important. Mr. E. G. McDougall has spent the whole winter in the Nicola Valley, making a complete reconnaissance. He reports that while there is very little merchantable timber there are very large areas of pole-size pine which will be of value soon. Fur-

ther, possibilities of the area he surveyed along the lines of pulp manufacture and water-power development are wonderfully good.

The Kamloops district, with an area of 6,619,000 acres, embodies, roughly, the valleys of the Thompson and the Big Bend of the Columbia. The western portion is semi-arid, and not heavily timbered except for good stands on the North Thompson. It is largely a plateau country, on which lumbering will not, for the present at least, assume any great importance. Along the line of the C. N. P., which runs through the middle of the district, the fire risk will be bad for a time. The eastern portion of the district is heavily timbered, and along the North Thompson and the Upper Columbia there will be tremendous development in the near future. There is some magnificent cedar and fir in the upper valleys. The fire risk here is not exceptionally bad except in hot summers. It is to be expected that District Forester P. Z. Caverhill will have constantly more and more work to do in fire protection, supervision of logging,



UPPER VALLEY, MOOSE RIVER, YELLOWHEAD PASS, HEAVILY FORESTED WITH SPRUCE AND LODGE-POLE PINE.



IMMENSE FORESTS HAVE BEEN DESTROYED BY FIRE IN BULKLEY VALLEY.



DRIVING TIES ON MOOSE RIVER, YELLOWHEAD PASS. THIS RIVER-VALLEY CONTAINS ABOUT TWENTY SQUARE MILES OF UNALIENATED TIMBER.



CABIN CONSTRUCTED BY PRE-EMPTOR, UPPER FRASER VALLEY.



BURNS LAKE, BULKLEY VALLEY.



TYPICAL CREEK VALLEY, BOUNDARY DISTRICT. UPPER SLOPES PRACTICALLY ALL BURNED.



CEDAR, FIR, TAMARAC, AND HEMLOCK IN WET BELT, WEST KOOTENAY.

issuing of tie permits, etc., as time goes on.

This district received considerable attention from the Branch reconnaissance men in the field. Over 300 square miles lying in the Upper Shuswap and North Thompson districts was accurately plotted by Messrs. F. W. Beard and A. G. Mumford, and returns are now being made to the Victoria office.

The Lillooet district covers 11,431,000 acres. In a general way it may be described as the Lower Fraser drainage basin, north of the junction with the Thompson. The country is largely dry mountainous plateaus, and foothills of the Gold and Cascade Ranges. There has been so little development except for occasional ranching operations that the forest work is only beginning to assume importance. As the Pacific Great Eastern goes through from Squamish Valley to Fort George, there will be increased activity in fire protection, cutting licenses and inspection, and Mr. Haylemore, who is to undertake the duties of District Forester, will have numerous problems on his hands.

The Vancouver district, of 15,765,000 acres, includes the bulk of the important timber country of the main coast. The Cascade Range forms the eastern boundary and the height of land which gives rise to the Klinaklini river bounds the district on the north. There is more merchantable timber being cut in this district than anywhere else in the province. In fact, Comox district alone provides two-thirds of British Columbia's output.

Moist atmospheric conditions render fire protection duties comparatively light, but there will be an immense amount of administrative work to be carried on, which Mr. G. D. McKay, who has been connected with the lumbering industry and the forest protection work on the coast for many years, is pre-eminently qualified to undertake.

Messrs. Schell and F. W. Beard have been for some time past cruising timber for sale in the Vancouver district. During the coming summer each will head a cruising party which will make examinations of applications to purchase lumber and pulpwood. Mr. J. B.



DENSE SECOND GROWTH DOUGLAS FIR ON BURNED-OVER LAND IN COAST DISTRICT.



YOUNG YELLOW PINE ON LOGGED-OVER LAND, KOOTENAY VALLEY, WHICH IS ENDANGERED BY PRESENCE OF SLASH LEFT AFTER LOGGING.



SECOND-GROWTH POPLAR WHICH HAS COME UP AFTER FIRE DESTROYED THE MERCHANTABLE CONIFEROUS FOREST.



USING SOUND, CLEAR LUMBER FOR FUEL WHERE DEFECTIVE LOGS WOULD DO. ONE DONKEY-ENGINE USES 2,000 FEET OR MORE PER DAY.

Mitchell is engaged in similar work in both the Vancouver and Island districts. Mr. H. R. Christie will assist Mr. McKay in the Vancouver district.

One feature of the activities of the coast work is the small fleet of fire patrol launches, which will cruise up and down the Strait of Georgia and Queen Charlotte Sound, ready at any moment to transport men and supplies to any fire which may be discovered. It is to be noticed that the east coast of Vancouver Island, north of the E. & N. Railway Terminal at Campbell River, is included in the Vancouver district. This portion of the island, which will be patrolled largely from the Strait, contains some of the richest timber areas in the whole west. In one valley, the Salmon River Valley alone, there was found last year three billion feet of merchantable material.

The balance of Vancouver Island, some 6,453,000 acres, is included in the Island district. Here the heavy timber, the prevailing damp climate and the comparative absence of railway development renders fire protection fairly simple. The country is very much cut up by low mountain ranges and long fords reaching in from the ocean. The

heavy seas, usual on the west coast, will make water patrol difficult, but there will be ample fire protection by the ranging staff in the land patrol. Timber inspection, and a careful supervision of timber marks will be the main duties of Mr. H. K. Robinson, who is taking over the Island in addition to his work as Chief of Surveys. Mr. G. H. Edgecomb has been assigned to assist him.

Mr. Robinson has just completed an important examination of the rights-of-way of the new railway under construction on the Island. The value of the timberland in this particular new line of the C. N. R. may be judged from the fact that it ran as high as 300,000 board feet per acre. Mr. Robinson is shortly to undertake a trip of inspection up the west coast by launch in order to lay plans for fire protection in the coming season.

The Tete Jaune Cache district encloses the valleys of the Upper Fraser and Canoe rivers flowing north and south, respectively, the latter to join the Columbia at the Big Bend. The district, which has an area of 4,698,000 acres, is very mountainous and heavily timbered. The summers are not as dry



TYPICAL LODGE-POLE PINE AND SPRUCE TIMBER OF UPPER FRASER VALLEY.



WIDE VALLEY OF VALUABLE MERCHANTABLE TIMBER WIPED OUT BY FIRE, UPPER FRASER RIVER.



DOUGLAS FIR, THREE FEET IN DIAMETER, UPPER FRASER VALLEY.



TREES LEFT ON LOGGED-OVER LAND ENSURE SEED SUPPLY.

as in the southern portion of the province, but there is a bad fire risk on account of the amount of development work which is going on. The G. T. P. runs along the Fraser as it bears away to the north, and the C. N. P. runs south from Tete Jaune Cache on its way to Kamloops and the main line of the Canadian Northern, and both these lines are sure to be a source of danger from fire.

The cutting of ties is going ahead rapidly, and there will be a great deal of work in the inspection of these operations. Then, too, there are already building in the district sawmills of a capacity of 250,000 per day, and the number will be increased, as the prairie market, to say nothing of a great local demand, is going to make the timber industry the greatest of the district. It will devolve upon Mr. C. A. MacFayden, who has been placed in charge, to make a rapid organization of all the protective forces of the Forest Branch before any great amount of survey or other work is undertaken. Not a small part will be the management of sales of timber, some of which is fire killed

and should be removed in the near future.

During the past fall and winter there was cruised by members of the Branch a large quantity of timber which will be sold in the near future. There was also a large amount of inspection done on railway and tie cutting operations.

The Fort George district, of 28,785,000 acres, lies in the great central inland plateau, embodying the upper watersheds of the Fraser, and its tributaries, the Blackwater, Nechako, Quesnel and Stuart rivers.

This is largely the famous Caribou country into which, on account of its gold there, was the historic "Rush" in the 60's. There is not a very great amount of timber in this district, but railway development is sure to act as a stimulus to the trade. Along the new line of the G. T. P. there are already established sawmills, largely for the purpose of immediate requirements of the incoming settlers. Fire protection does not assume the importance of timber inspection, and right-of-way supervision at the present time. Mr. H. G. Marvin, who is to be District Forester,



THE AVERAGE STAND OF YELLOW PINE, EAST KOOTENAY VALLEY, IS OPEN AND SCATTERED.

will be concerned mainly with these latter matters for some time. There has been carried on in the past winter in this district inspection of right-of-way for fire protection purposes, and the examination of ties which have been cut.

The Hazelton district, of 13,786,000 acres, takes in the watersheds of the Skeena and Bulkley Rivers. The country is rolling to mountainous with a forest cover not as continuous or heavy as in the district to the south. The G. T. P. runs through the middle of the area on its way down the Skeena to Prince Rupert. Timber inspections, tie cutting permits, and similar work, with the laying of plans for protective development in the future will be largely the work of Mr. R. E. Allen, the District Forester, and his assistant, Mr. H. C. Kinghorn. One of the notable achievements in this district so far is the examination made by Mr. J. B. Mitchell in company with a British Columbia land surveyor's party in a tract of 30,000 acres in the Omindea country. Maps and reports descriptive of this tract are now being prepared in

Victoria, which show that district to have 550 million feet of merchantable timber, and 600,000 cords of pulp-wood. The area has been burned over more severely than any other part of British Columbia.

The Prince Rupert district comprises 18,723,000 acres west of the Cascades between the northern extremity of Vancouver Island and Portland Canal. The Queen Charlotte Islands are included. The country is very broken by the long sea channels, and practically all the patrol will be undertaken by means of launches. The district offers wonderful possibilities in the direction of pulp industries. Already there are two large mills on the ground, and a great quantity of pulp-wood, principally hemlock, is being cut in the northern portions of the district. The stand of timber is very heavy, particularly in the southern parts, and there will be a large logging industry in additions to the handlogging already. As in the other northern districts, land classification is one of the most important works to be undertaken. Mr. H. S. Irwin will have charge of the district.

OREGON FOR CONSERVATION

By HON. OSWALD WEST, *Governor of Oregon*

WE of Oregon believe in true conservation, sane conservation. We insist that an all-wise Creator placed these vast resources of the nation here for the use and benefit of all the people, generations past, present and future. We believe that every opportunity consistent with the rights of future generations should be given the people of this day to develop these vast resources and devote them to a beneficial use, and we insist that such action can be taken without working a hardship upon those who will come hereafter to deprive them of any of those rights, privileges, or benefits to which they may be justly entitled.

"Prior to the creation of the national forests, our timber resources were fast slipping from public ownership into the hands of a few large corporations, whose aim appears to be control of the industry. Their policy is to acquire and hold, letting the other fellow supply the demand of today, well knowing the time will come when they will control all that remains of our once vast timber supply and, therefore, be in position to dictate the prices at which it shall be sold. It is estimated by the government authorities that the timber supply in this country amounts to about 2,000 billion feet, and if the present cut continues, it will last but fifty-five years. The records show four-fifths of our timber to have passed into private ownership.

"The timber supply of the northwest is placed at about 1,500 billion feet, or a little more than 50 per cent of that of the nation. Two-thirds of the timber in the northwest is in private hands. One-half of it is held by thirty-seven owners, and one-fourth of it by three owners, the Southern Pacific, the Northern Pacific, and the Weyerhaeuser interests. The holdings of the Southern Pacific amount to 106 billion feet of timber and about 3,300,000 acres of land; the Weyerhaeuser interests, 96 billion feet and 1,945,000 acres; and the Northern Pa-

cific, 86 billion feet and 3,000,000 acres. These timber holdings of the Big Three in the northwest are more than one-half as great as the entire holdings of the Federal Government. Their combined holdings in Oregon and Washington are as great as that of the Federal Government in the said states.

"According to the Government figures there are 545 billion feet of timber in Oregon, three-fourths of which is in private hands. Of the latter, 89 billion feet are owned by the Big Three. These interests own in Oregon two-thirds as much timber as the Federal Government. Their holdings in our State are greater than that of the Government in either Washington or Idaho.

"From the foregoing it will be seen that our timber resources have been gradually slipping to the control of selfish interests and had not the policy of Federal reservation and control been inaugurated at an early date, every acre of desirable surveyed land would by this time have passed to private ownership."

Governor West took occasion to refute the charge that millions of acres of valuable agricultural lands are being bottled up in the Federal forests.

"There may be tracts here and there," he said, "suitable for agricultural purposes, but the acreage is small. In 1901, 700,000 acres were eliminated from the Olympic National Forest in the State of Washington on the ground that it was chiefly valuable for agriculture and that the settlement of the country was being retarded.

"When the lands were thrown open to entry, most of them were filed upon under the timber and stone law, which requires an oath that the land is valuable chiefly for timber, but not fit for cultivation. An investigation ten years later (1911) showed most of the lands to have passed into the hands of timber companies. Only one hundred settlers were living in the area eliminated, and the total amount of land in cultivation

was but 570 acres, or an average of less than six acres to the settler.

"These selfish interests give voice to the cry for State ownership of the lands in Federal forests and point to the fact that they are escaping taxation, but they fail to point out the further fact if these lands were State-owned the lands would not be subject to taxation, and to the further fact that the Federal Government spent in 1911 about \$493,000 in our State alone for forest pro-

tection, while the receipts from sales of forest products and other sources amounted to but \$142,000. I doubt under existing conditions whether it would be good business for the State to take over those forests even if that privilege were to be extended by Congress."

Extracts from Gov. West's address at the conference of Governors in Salt Lake City.

USING BLIGHT-KILLED CHESTNUT

THE inroads of the chestnut bark disease, or chestnut blight, on the chestnut trees of New England and the Middle Atlantic States is resulting in the death of a great deal of chestnut timber. Officials of the U. S. Department of Agriculture recommend, to prevent the spread of the disease, that shipments of chestnut timber should include only material from which the bark has been removed and from which the diseased spots have been cut out.

In the region affected there is a good market for all chestnut products except cordwood. The demand for poles and ties absorbs all that are offered, and lumber finds ready sale in local markets. Cordwood, however, is often a drug except within shipping distance of tanning extract plants, brass foundries, lime kilns, brick yards, and charcoal plants.

The question has arisen as to whether the disease-killed timber is less valuable than that from green trees. Strength tests made by the Forest Service indicate that sound wood from chestnut killed by the bark disease is as strong as that from green timber.

The bark disease kills the tree by girdling the trunk, and does not cause

unsound or decayed wood, which is the result of attack by fungi or insects. Until two years after the death of the tree the wood generally remains sound, though at the end of that time insects have commenced working in the sapwood. Three years after death the sapwood is honeycombed with insect burrows; in four years it has decayed, and begins to dry and peel off in the fifth year. After this the heartwood checks badly. To avoid loss, therefore, all timber should be used within two years after being killed.

At a recent meeting in Trenton, N. J., foresters were present from most of the States in which the chestnut bark disease is prevalent. Connecticut, New Jersey, New York, Pennsylvania, Virginia, West Virginia, North Carolina, and the Forest Service and the Bureau of Plant Industry were represented. Representatives of the States approved the investigations undertaken by the Forest Service, and recommended that the individual States give particular attention to the development of local markets for stands of blight-killed chestnut. Owners of such timber should apply to the State Foresters or to the Forest Service for further information upon the uses and markets for chestnut.

BUSY SEASON FOR FORESTERS.

Mr. James A. Conners of the surveying and estimating force of James W. Sewall, Old Town, Maine, has taken a crew into the Northern part of that State for a several month's surveying and estimating trip. Mr. Kenneth M. Clark of the same force has also gone into the West Branch of Penobscot region in Maine on a similar piece of work. Mr. Sewall reports a busy season so far, with a continually growing demand for careful and detailed timber estimates and maps.

TIMBER CULTURE IN THE PRAIRIE STATES

BY HON. L. B. HANNA, *Governor of North Dakota*

MY own State, North Dakota, was at the time settlement began in it, entirely destitute of trees except along the river bottoms and a comparatively small area in the northern part of the State in what is called the Turtle Mountains, a range of low hills. Since the settlement of the State began some thirty-five years ago, the farmers have been steadily putting out trees, largely cotton-woods, box-elders and some ash. Where the trees have been taken care of and given any chance at all, they have done reasonably well, although the trouble with the cotton-wood, where it is grown upon the uplands, is that after a period of years, if a dry season comes on, the trees are apt to begin to die out, probably from lack of sufficient moisture.

The President of our North Dakota Agricultural College has very strongly recommended to the people of the State the planting of trees along every section line, east and west, the idea being that with these trees planted in this way that they would act as a wind break and would break the hot winds that we occasionally have and that burn up the crop or mature it too rapidly in midsummer. I believe that the idea is a most excellent one and one that might be followed to advantage in all of the Western prairie States situated and of the same general character as my own.

The value of trees should be emphasized to the farmers, and they should be encouraged both by the Agricultural Colleges and Experimental Stations in the various States, and also by the business men in the towns, for the reason that the trees add so much to the beauty of the prairie and they also do so much practical good.

We are continually striving in the West to induce people to settle in our midst and any piece of land or farm that has a nice growth of trees upon it will sell for enough more money to

many times compensate for the care and cost of planting the growth and taking care of it afterwards. Experiments should be made by the Agricultural Experiment Stations with the different kinds of trees to find if there are not some other trees that will grow as fast as the cotton-wood or box-elder and that perhaps will prove more hardy and more durable. We have tried the ash to some extent. It is a very beautiful tree and hardy, but its growth is very slow. We are using the willow for wind breaks and it is a splendid tree for that purpose. I have in mind one farmer in Cass County who planted willows around his farm about twenty years ago. It was the time when the Russian Cactus first appeared, and it was thought that this cactus would absolutely destroy the farm lands of our State. A great many methods were devised to try and stop the cactus. The County of Cass appropriated quite a sum of money and built a fence on the south side of the county to keep the weed from rolling from the south up into the country. This fence stood for a number of years and was finally abandoned, for it was found that with proper cultivation the cactus could be controlled. This farmer I speak of said that he did not have the money to fence his farm, but instead he planted willows all around it. Those willows have done wonderfully well in the years. He has trimmed them up and his farm to-day is one of the most beautiful in the whole county, and there is no question but that these trees will add at least fifteen dollars an acre to the value of his land and that it would sell for that much more money to any prospective buyer were the farm for sale.

I have great faith in the prairie States; the soil is excellent, and with proper cultivation and care the results obtained by the farmers are good. Our

farmers, as elsewhere, have shown more or less inclination as they get a little better off to leave the farms and move into the towns. I have thought sometimes that the reason for this was that the farm was not attractive enough; that the life was a little barren; lack of social chances and that, too often, our farmers in their anxiety to get in their crops early, did not pay as much attention as they should to the side of life which meant and would build up a home and make of their farm a real home. In traveling over the prairie States, either by train or by auto, or any other conveyance, we see so many homes which are not really homes at all, but look just as though somebody had camped down there and that they had no intention whatever to

make of their camp a permanent residence. I feel that we should do all that may be within our power to encourage our farmers to properly care for their buildings; to keep their places up neat and clean; to put in good, large gardens; to plant shrubs, different kinds of berries and fruit that will mature in their particular climate and location and to plant north and west and perhaps on the other sides of their buildings, groves of trees and to plant these trees far enough back from the buildings so that in case of snow in the winter that the snow will not drift through and interfere with the buildings themselves, but will act as a wind break and a snow shield and keep the snow from drifting and piling up in huge drifts in and around the buildings.

AMERICAN FORESTRY ASSOCIATION ENDORSED

AN indication of how the lumbermen look upon the activities and the work of the American Forestry Association is to be obtained by reading the following resolutions, adopted at the recent meeting of the National Lumber Manufacturers' Association, held in Kansas City, Mo.:

WHEREAS, The American Forestry Association is maintained as a voluntary public service organization to further the perpetuation and better use of our forest resources, and,

WHEREAS, It is the only organization which reaches and appeals direct to the public in a popular way regarding forestry and lumber matters, and maintains for this purpose a monthly magazine known as the AMERICAN FORESTRY MAGAZINE, and,

WHEREAS, The lumber industry as a whole is keenly interested in forest conservation, and in means of acquainting the public with the problems of fire protection, forest taxation, forestry legislation, conservative management and reforestation,

BE IT THEREFORE RESOLVED, That the National Lumber Manufacturers' Association endorses the work of the American Forestry Association, and pledges its support to its cause.

BE IT FURTHER RESOLVED, That each member of the associations affiliated with the National Lumber Manufacturers' Association be urged to join the American Forestry Association, and to subscribe for the AMERICAN FORESTRY MAGAZINE.

A REMOVAL NOTICE.

Fisher & Bryant, Inc., Consulting Foresters, announce that they are now located in larger quarters at 39 Asticou Road, Forest Hills Station, Boston, Mass. Directly opposite the Bussey Institution and adjacent to the Arnold Arboretum of Harvard University. The firm will continue at the new Office, the practice of Forestry including: timber valuation, boundary and topographic surveys, fire prevention, working plans, the management and operation of forest property and forest planting.

LUMBER PRICES RISE.

The Balkan War has brought about a rise in certain lumber prices in Europe because of the big demand for wood for ammunition boxes.

FIGHTING FOREST FIRES

The Class B Fire—Covering But a Few Acres

By E. R. BRUNKE

ALL day long George Hollingshead Randolph bent over various books, posting and totaling and checking figures. Mr. Randolph was a bookkeeper. For an equally long day, Wilbur Washburn Worthington divided his time between taking the dictation of letters and transcribing them on the typewriter. Mr. Worthington was a stenographer. To see these two young men coming out of an office building in a thriving western city at about five o'clock in the evening you would little guess that deep down in their hearts each had tucked away a great, big love for the outdoors. Once a year, however, that love would blossom into a two weeks' vacation, when just a tiny

day through the brush, and learning a lot of statistics about big game calibres, when one (meaning George, of course) had never been known to kill anything larger than a "fool" hen, which anyone could knock over with a stick anyway, though they had once come upon what looked like fresh bear tracks, and while the tracks seemed to lead into the river, apparently they never came out again, though they searched both sides of the stream for a mile. Wilbur claimed afterwards that it must have been a Dinosaur.

But just mention *fish* and Wilbur's eyes would promptly begin to pop and bulge until they verily threatened to break his glasses. Immediately there would flash through his mind all that he had ever heard and read and learned by experience, about the Grey Hackle, the Brown Hackle, the Royal Coachman, and a few dozen other varieties of flies, and he would peacefully settle down for an extensive discussion of fish—as George said, any kind of fish, broiled, fried, baked, canned, possible or impossible.

Suffice to say that on the 26th day of a certain July these two young gentlemen found themselves encamped along a rushing stream in the Bitterroot Mountains of Idaho, bent only on diversion and recreation.

On the 22nd day of a certain June Thomas W. Anderson finished his Junior year in an eastern college of forestry. On that same day he was told by the dean of the school that he should prepare to report to the office of the White Pine National Forest, in the heart of the Bitterroot Mountains of Idaho, where he would receive an appointment as Forest Guard and possibly have an opportunity to apply some of the theory of forestry he had learned in school. Whence there was made a joyful Forester-to-be in the



"IN THE HEART OF THE BITTERROOT MOUNTAINS."

outcrop of what might be termed the caveman instinct would become manifest.

George's hobby was shooting (remembering always that there is a vast difference between shooting and killing), and he could "talk an arm off of you" on the relative merits of certain makes and calibres of guns, their velocity, penetration, etc. Wilbur claimed he never could see the sense of dragging a heavy gun around all



"UP ON OLD BALDY."

person of one Thomas W. Anderson.

Along about that same time a conversation was taking place in the office of the White Pine National Forest between the Supervisor and the Old Ranger, which ran about as follows:

Supervisor: "Well, Ed., I've got a guard picked out for you for this summer."

Old Ranger: "Ye-eh."

Supervisor: "Fellow named Anderson—Thomas W. Anderson."

Old Ranger (wrinkling his brows): "Never heerd o' him. Thought yuh wuz goin' t' put on Sam Brown—he ain't doin' nothin' this summer and wants t' get in th' Service. Who's this feller Anderson, an' where does he come from?"

Supervisor (smiling): "Why, I expect he'll have a good letter of recommendation. He's an eastern boy going to the Big Tree Forest School."

Old Ranger (in frank disgust): "Naw, honest? Yer jes jokin', aint yuh? Yuh ain't goin' t' pawn off no school boy on me, are yuh?"

Supervisor chuckles to himself, but says nothing.

Old Ranger (continuing): "Why, lookahere, we ain't goin' t' have no time monkeyin' around breakin' in kids. I wuz expectin' t' put a guard up on Old Baldy since we built the telephone line up there, an' yuh know he won't see a soul fer a week or more at a time. An' then, too, he'll have t' cut logs fer th' cabin an' work on that trail down th' other side. Say, Super., yer jes kiddin' me, ain't yuh?"

Supervisor (laughing): "Not a bit of it, Ed. But it may not be half as bad as you think. The dean of the school says he's a good, big, husky, ambitious boy, so it's right up to you to get all you can out of him. Then, too,—"

Old Ranger (interrupting): "Now, wait a minute, Super., an' jes listen. He's supposed t' be a Fire Guard, ain't he, an' here yer goin' t' give me a kid that's prob'ly never seen a forest fire, an' wouldn't know what t' do if he did see one—prob'ly look around fer a fire box and wait fer th' engines. Why,

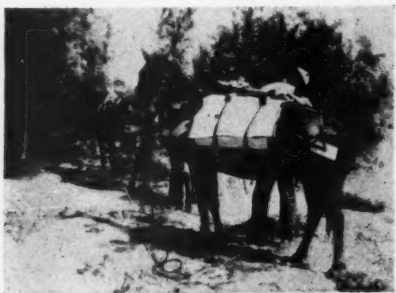
yuh know Old Baldy's th' most important lookout in One (Ed's district number), an' a man's got t' know th' country, ain't he?"

Supervisor: "Well, he'll have a plane table, a map, a scale, an alidade, a compass, field glasses, telephone, some common sense—and you to fall back on. I think he'd ought to be able to locate something with that. And, besides, he may be able to teach you something about technical forestry between times."

Old Ranger (snorts): "Yas, maybe." (Brightens with a sudden thought) "I tell yuh, Super., why not send him over in Two? Jimmy's got a hankerin' after college men" (Jimmy was the Ranger in charge of District Two).

Supervisor (smiling again): "Well, Jimmy's going to get one, too. Think I was going to give you all the best of it?"

Old Ranger: "Gee, it's one grand outlook. Chaperone over a Fire Guard that never seen a fire an' don't know th' difference between a brush hook an' a grub hoe, nor a gulch an' a divide. Gee—."



"BRING IN ONE OF YOUR PACK HORSES."

Supervisor (interrupting): "I forgot to tell you, he'll be here next week, Ed. Better bring in one of your pack-horses so as to take his outfit up the mountain. Now, you'd better go out and fix up your Property Account with the clerk while I work on this report."

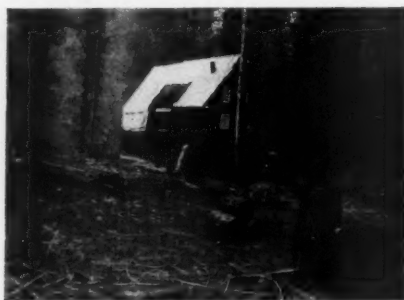
Old Ranger (with parting fling): "Say, Super., yuh better write him to be sure an' not fergit his man-e-kure set, cuz he'll sure need it."

One-half hour later the Supervisor looks up from his report and catches

a grumbling coming from the other room. The Old Ranger is still pouring out his wounded feelings to the sympathetic clerk, and some of the words reach the Supervisor. "Fierce—school boy—lily white hands—chaperone—kid—diamond hitch—(bang on table with fist) lawful proposition!" But the Supervisor knows the Old Ranger and just chuckles to himself as he turns again to his report.

* * *

To begin with, Old Ranger was agreeably disappointed in Thomas W. Anderson—he was sure a good, husky-looking chap and didn't talk too much—two things decidedly in his favor.



HIS LOOKOUT "STATION."

"Now, son," said Old Ranger some days after, by way of final instruction to the new Guard, after he had helped him settle in his lookout station on top of Old Baldy, "don't sound no alarm about fire unless yer sure it's one. Don't git excited if yuh see some smoke. Locate it and size it up and make up yer mind th' fire 'll be some bigger'n yuh think. Don't try t' git to it if it's too far away. Phone me. If it's close and yuh think yuh won't git lost comin' or goin', go an' investigate—but don't go empty-handed, take a mattock or a shovel—an' keep a compass in yer pocket—an' take yer bearings before yuh go. Remember, when yuh git lost, yuh need yer brains th' most.

"Study th' country and th' map all th' time till yuh know it. See that far range—them's th' Cabinets. That peak t' th' left is Breezy Mountain. Yonder's Old Grassy Top, an' over there's th' Three Sisters. Them's Twin Peaks



"TO TH' RIGHT'S HUCKLEBERRY MOUNTAIN."

an' t' th' right's Huckleberry Mountain. 'Way off there's Chimney Rock, an' that one—yuh kin jes' see through th' trees—that's Packsaddle Mountain. On a clear day yuh kin make out th' Kootenais 'way off behind.

"That big canyon off down there 's th' Main Joe—all these streams flow into it. Here's Marble Creek—next t' it's Slate Creek—that windin' one's Skookum Creek. Them's th' North an' South Forks. An', oh yas, yonder's Old Grizzly Mountain—there's a trail goes over that maybe I'll take yuh over some day—it oughter be brushed out, anyway.

"See that long, high divide there? That separates th' Joe an' Clearwater Rivers. Pretty rough country, that. They say there wuz a party of six went in there some years ago an' never come out. Ain't no trails in there at all.

"Wal, so long, kid. If yuh git t' feelin' lonesome, jes call me up on th' phone—an' yuh'd better hang yer bacon up high, cuz bears is powerful fond o' bacon. Them logs yuh'd better peel, cuz they'll weather better when peeled

—an' that trail, try t' keep it under 10 per cent grade, so's it won't be too hard on packhorses. But most of all, remember there's a lot o' campers in th' hills now an' anyone's liable t' start a fire. Good luck."

* * *

For ten days George Hollingshead Randolph and Wilbur Washburn Worthington had had an elegant time. Trout were more plentiful and seemed larger than ever—and grouse and pheasant!—the woods seemed to be full of them. There had been no rain whatever, and a blue haze from some distant smoke was beginning to settle in the valleys. Once they climbed to the top of a high peak and saw the smoke of a forest fire away off, maybe twenty miles, and in fascination they watched it, rolling up in great clouds of smoke, sometimes white, sometimes black, and then seeming to disappear for a time entirely—but they didn't know that often it was burning hardest when least visible.

One morning they turned to their diary and read with regret the date—

August 5th. That meant it was time to break camp; the dream of another year was ended. And then luck surely came their way in the form of a packer with an extra packhorse traveling empty, who offered to take out their outfit, an offer they accepted with considerable alacrity. A hundred yards on their way, and George remembered they had left their collapsible bucket down by the creek. He turned back and readily found it just where he had left it that morning, still filled with water. He emptied it out and started back, and then paused to note a sign confronting him, securely tacked to a tree—"Forest Fires—Warning." He glanced over toward their camp fire and saw that it was still smouldering, and, with a somewhat benign feeling, he went back to the creek, scooped up a bucket of water, carried it over and dashed it on the fire. Then he turned, and hurried after the others. I had to put out the fire," he explained when he had caught up.

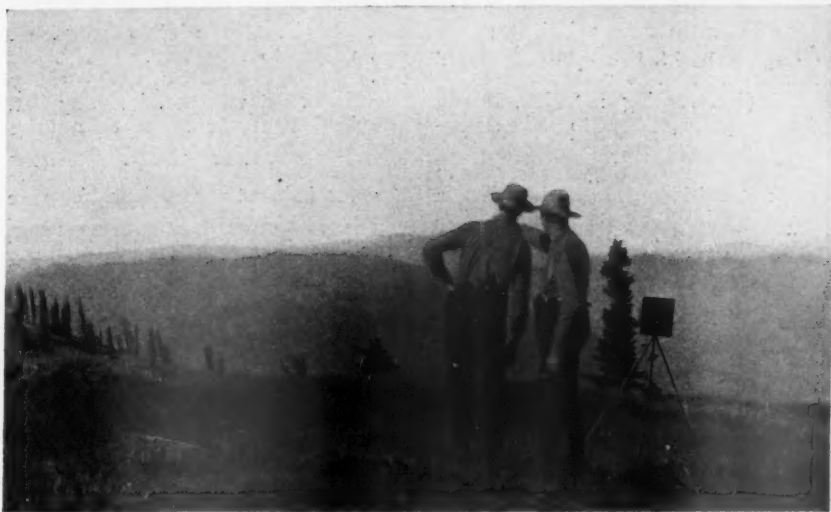
"It's a good idee," said the packer, "a feller dassent take no chances in this kind o' weather. See that old burn

(pointing to the side of a distant mountain covered with what looked like an army of charred sticks that had once been thriving trees). That wuz as fine a stand o' young white pine as yuh'll see. Two years ago th' fire run through an' burnt about a section. Sure burnt fierce for a while an' th' Rangers had a hard fight, but they fin'ly corralled it. Be'n pretty wet this spring, but turnin' dry again. Comin' over th' divide yestiday I seen two fires aboilin' up—looked as though they wuz over on th' Red Fir Reserve, though. I tell yuh, a feller dassent take no chances with fire. Hi! yuh bald-faced, knot-headed cayuse (yelling at one of the packhorses), git in th' trail there."

And the fire George had extinguished. It sizzled and steamed from the water as if emitting a dying gasp, yet a portion of one ember had remained high and dry, and after a while sent forth a tiny stream of smoke. Later it glowed with fire, and when the sun had dried out a few more sticks it passed the fire along to them until they too were a glowing mass. In a little while the wind came and rolled one brand over and



"YONDER'S OLD GRIZZLY."



"SEE THAT LONG, HIGH DIVIDE."

over until it lodged in a clump of dry pine grass—then it fanned into a little blaze and spread the flames to the grass. They kept creeping and creeping and reaching out with their tentacles, until they were consuming bushes and seedlings, seeming at times to rest and then rousing into new life, but always advancing—patient, ruthless and devouring. And of all this George knew nothing.

* * *

Forest Guard Anderson was making good in the estimation of Old Ranger. He had cut and peeled enough logs for the cabin, split a lot of fence posts, built nearly a mile of passable trail—and kept his eye out for fires. Incidentally, he had killed a small black bear—and with one shot, too. About noon one day he had seen the creature moving through a huckleberry patch. At first he wasn't sure but that it might be somebody's pet dog—it acted so tame-like. Then he remembered all the circus bears he had ever seen and decided to take a chance on a shot. Trembling with excitement, he raised his gun, pointed it all over the bear a dozen times, and finally pulled the trigger. The bear gave a sharp turn of his head and bit at the place where the bullet had

struck—started to move off, then crumpled up and rolled a few yards down the hill. Gingerly Tom approached him with pointed gun, but after watching him carefully for some time and failing to detect any signs of life, he prodded the animal with the end of his rifle. It didn't move—it was stone dead, and from its jaws ran a little stream of blood.

Suddenly realizing he had killed a real bear, Tom turned and hurried back to his station, more than a half mile away. Out of breath he seized the phone and vigorously rang up Old Ranger, who happened to be eating dinner at the time.

Tom: "Hello, that you, Ed?"

Old Ranger: "Yas."

Tom: "I just killed a bear."

Old Ranger: "Naw!"

Tom: "Yes, sure, a black bear, and a pretty big one."

Old Ranger: "Sure it's dead?"

Tom (hesitantly as he thinks about it): "Why, I guess so. Maybe I'd better go back to make sure, though."

Old Ranger (chuckling to himself): "If it ain't more'n a mile, I sure would; an' yuh'd better hurry, yuh can't tell nothin' about bears. Why, I put three .45-90's in a black bear once an' he laid

there all one afternoon an' night, an' in th' mornin' wuz gone. Bears is mighty deceivin' critters. Another time—"

Tom (interrupting): "Well, I guess I'd better go right back to make sure—good-bye. (Hangs up receiver sharply.)

Old Ranger (laughing and turning to wife): "Th' kid says he's jes killed a bear. Bet he's fergot all about dinner."

Old Ranger's Wife: "I think that's downright mean of you, old man, to send the boy back on that long, useless trip."

Old Ranger (grinning): "Naw, sal, that ain't mean—that's experience he's gittin'."

The first two weeks in July had been unusually wet and not a fire had been reported. The third week was warm and clear and things dried out with surprising rapidity. By the first of August it was *very* dry, and upon Old Ranger's advice Tom put in most of his time at his best lookout point, watching always for fire. Sometimes he was a little lonesome, but he liked to feel the great winds that touched only the tops of mountains, and watch the panorama before him; it was all so vast and wonderful—he seemed almost to be in another world. He was tanned and strong now, and the axe and shovel and mattock had put thick callouses on his hands. Once he spied a large smoke which he decided from his map must be way down in the lower end of the Forest—probably District Six. He told Old Ranger about it, and the latter said he'd "heerd" there was a bad fire down there.

One morning (it was August 5th, to be exact) he looked carefully around and decided that all the country within his range was free from smoke—except off in Six, where the smoke still hung lazily in stratum-like clouds. Then he decided to work over to a rocky point a couple miles away and get a closer view of the Boulder Creek country—Old Ranger had told him it was heavily timbered and had a high falls. But it took him considerably longer than he expected—it had been rough going—and it was noon before he returned to his camp. He immediately looked over the country—then tried to get Old Ranger

over the phone in order to report, but was unable to raise him. His dinner was a simple matter and quickly over with. It was hot, intensely hot, and he sought the shade of a huge boulder after his meal. For a long time he stared off, half-dreamily into the distance, and almost unconsciously his gaze became concentrated on one particular spot. He continued watching closely for some time—then went over to his tent and got out his binoculars. With them he plainly saw smoke rising



"THAT CANYON OFF DOWN THERE."

through the trees, and as it rose above the tops it was swept and whirled away by the wind. He judged it to be about five miles away. There were three ridges and canyons to cross, and he knew from the nature of the country it was brushy and rough and spelled hard going. He tried to get Old Ranger on the phone again, but still he couldn't raise him. It put him in a dilemma. To go and return meant ten miles—ten hard miles. It was then close to two o'clock, and figuring on being back at eight in the evening, would give him six hours. Maybe it was just a little fire and he could handle it alone—he wanted to cope with the situation himself if at all possible. The fire didn't look very big, it's true, but he remembered what Old Ranger had told him—and then, too, it was probably spreading. If only he could talk with Ed. But he was probably off in some other part of his district. Old Ranger's station was about six miles down the mountain. He could make that in less than two hours. Yet still he hesitated. Supposing the fire didn't amount to much—it certainly



HIS DINNER WAS A SIMPLE MATTER.

didn't look to be spreading very rapidly. Yes, by George, he'd take a chance on it and go and look it over himself. He got his bearings and put his compass in his pocket. Also he took a mattock, and made up a little lunch of biscuits and bacon and some sweet chocolate. The lunch he wrapped in a bandanna handkerchief and tied it to the strap of his trousers in back—Old Ranger called it a "shirt-tail lunch." He was all ready to leave when, turning, he almost walked squarely into Old Ranger himself. "Hello, son," grinned the latter. "Where yuh goin'?" Tom said nothing—just pointed off toward the smoke; at the same time he came pretty near putting his arms around the Ranger and hugging him for joy. Old Ranger looked off in the direction noted. "Huh, fire," he said, and didn't get the least bit excited.

"I tried to get you over the phone, but nobody answered," said Tom.

The other grinned. "Good reason why. Comin' up th' trail I found where an old snag had fallen across th' line an' broke it, but I spliced 'er up

again, an' she oughter be workin' now."

He called up his home, and his wife responded.

"Sal," he said, "they's a fire a couple miles from here. Tell Frank an' Joe t' pick up a couple fellers an' come right up. They better bring their blankets an' about two days' grub. What tools? Oh, a couple axes, three or four shovels and a couple grub hoes. Yas, call up th' Super. an' tell 'im about it. An' tell those fellers t' move right along—we'll be waitin' fer 'em. Yas, I'll be home as soon as I kin. Naw, it don't look very big—maybe four or five acres. An' hello, hello, say, don't let them colts git out. Good-bye."

About five o'clock four men marched into camp. They were typical mountain men, and on the back of each was a pack containing blankets, grub and a few cooking utensils. Two of them had six-shooters, and tied to their packs was a pair of grouse. Old Ranger and Tom were ready with their own packs, and with a few words of greeting and a glance toward the fire, they swung off down the hill, the Old Ranger taking the

lead. It was a hard pace set by the mountain men, but Tom doggedly stuck to them, and about 7 o'clock that evening they dropped down on to a stream on the other side of which the fire was burning.

"You boys git up a bite to eat," said Old Ranger to the men, "an' we'll tackle th' fire afterwards. Yuh see, night's generally th' best time t' fight fire," he went on to Tom, "cuz th' air is cooler an' there's a certain amount o' dew settles on th' ground so that th' fire don't travel so fast. Yuh'll notice a fire'll most alwuz start springin' up about ten o'clock in th' mornin'—then she'll burn hard till long towards evenin'. If yuh kin git yer trench around during th' night, all yuh got t' do is watch it durin' th' day. O' course, when th' fire ain't burnin' so awful hard an' fast durin' th' day, yuh kin trench a lot then. Sometimes, yuh build all yer trench in th' day an' jes patrol at night. Fire's a funny thing, an' yuh got t' be governed by conditions as yuh find them on th' ground. No two fires is alike. Most generally, when it ain't too hot, or the fire ain't travelin' too fast, yuh want to put yer trench right up against th' fire. Th' idee is this—yuh can't put a fire of any fair size out, but yuh kin *make th' fire put itself out*. If yuh make yer trench too far from th' fire, maybe a wind 'll come along an' fan up th' unburned part, an' by th' time it reaches th' trench it may blow right acrost it, whereas, if yuh build yer line right agin th' fire, soon as th' fire strikes th' mineral soil it dies out. An' you want t' watch out fer ol' snags an' logs fallin' or rollin' across th' line an' startin' new fires. But, come on, let's git some supper."

After supper they all waded across the stream and attacked the fire as mapped out by Old Ranger, who went ahead and blazed out a line that they were to trench. Tom went with him.

"Yuh see," he explained to the eager boy, "fer a start yuh want t' take advantage of ev'ry natural object yuh kin. See where that ol' game trail stopped th' fire—an' that slide rock over there? Ev'ry little bit helps in th' case o' fire."

There was a certain fascination about

it all to Tom. He watched the fire creeping along—some places rapidly—some places slowly—in others it had died out entirely. It burned in irregular and freakish shapes, being governed largely by the wind, the topography of the country and the nature of the ground cover.

Old Ranger went on, "Yuh see, there



"'ALONG A RUSHING STREAM."

ain't much cuttin' down o' trees when yuh build a fire line, except where there's a heavy stand o' young stuff that ain't naturally thinned out yet. But ordinarily, yuh jes clear away th' litter an' humus an' expose th' bare or mineral soil. Lookathere!"

Just above them the fire had caught on some dry moss hanging from the limbs of a pine tree, and with a swish spread up through the top of the tree like a great firework, until it had consumed all the needles and twigs and small branches. Then it slowly died down, leaving only a shimmering trunk and limbs that glowed fantastic in the night.

"Lucky there wasn't no wind," said Old Ranger; "that's one way top or

crown fires start—an' then yuh want t' look fer a good, safe place t' git to. Ain't generally no sense in tryin' t' stop a top fire in these hills—sometimes they travels near a mile a minute for spells. See it burn through that stand o' red fir reproduction," he added, pointing where the fire was cracking and whipping with great flames through a little patch of small, young trees. "Fir's pitchy an' burns hard—only when it gits old, o' course, it has a heavy bark which forms a good resistance t' fire. Old Douglas fir and yellow pine an' tamarack or western larch, an' cedar stands fire best. White pine an' white fir dies easy—some claims smoke alone kills pine. Hemlock's a little better. This ain't th' first fire's been here. See them old fire scars? (pointing to a portion at the bases of a number of trees no longer covered with bark; we calls them 'cat faces,' an' most generally rot sets in. See that old cedar with a butt so holler yuh kin stand in it—yet th' top's nice an' green."

The two continued on over the fire, sinking deep in hot ashes in places, and all the time enveloped in a somewhat fragrant smell of burning resinous wood.

"Some people 'll tell yuh fire won't travel down hill. Lookathere!" He pointed where the fire was traveling through a patch of brush. A little wind had sprung up and was steadily driving the fire down the hill.

Here and there old standing snags were smoking like chimneys. Some were blazing at the base, some at the top, some all the way up one side, and others apparently burning from within, the smoke and flames oozing out of cracks and seams in the trunks. Once in a while there would be a crash as some old veteran would topple over.

"Wal, son, we'd better git some tools an' help th' boys," Old Ranger concluded, after they had made the circuit of the fire and decided it wasn't so bad, after all; "we want t' try an' git this line all th' way around tonight. Lucky we've got th' river on one side."

All night the six men toiled and sweated in the heat and smoke, and by

morning they had the fire completely surrounded. They had worked hard and were tired, yet Old Ranger, who seemed to be all over and worked hardest of all, showed least signs of fatigue.

The next morning he called Tom over to him. "What might that be, d'ye think?" he said, pointing to some charred limbs on the ground. "Wal, them wuz pine needle beds used by some campers, which means them campers didn't put out their fire, which means that there," pointing over the burned area. "Wish I knew who they wuz. I'd sure arrest them an' teach 'em a lesson. Jes shows what a little carelessness 'll do. Right near th' crick where a couple buckets o' water would put out any fire—an' still they won't do it. It's either orneryness—or they's too damn lazy." He struck one clenched fist on the palm of his other hand.

"Wal, we'll leave two o' th' boys here to look after th' fire fer a couple days, an th' rest of us 'll pull back after dinner. Don't think she'll git away now, but yuh never kin tell. It sure don't do to take no chances whatever, cuz yuh never know what a fire will do, particularly if a wind comes up, which is generally the most important proposition in fighting a fire anyway—but them boys has been on fires before an' they'll look after things all right. Yuh'll have to keep yer eyes peeled fer fires from now on, son. Come on, now, git yer pack ready."

And George Hollingshead Randolph never knew that by carelessly failing to fully extinguish his camp fire he had caused a loss and damage to over one hundred thousand feet of timber, and a more or less inestimable amount of potential timber in the form of young trees and seedlings, to say nothing of the money expense incurred in fighting the fire; and but for the Rangers a vast area might have been destroyed and human lives endangered.

Whence it is hoped that those of the readers who travel in the woods will be more careful to extinguish their camp fires than was Mr. Randolph.

PRACTICAL CONSERVATION*

By J. B. WHITE, *Director of the American Forestry Association*

THE conservation of all natural resources means much for the present and for all future generations. To protect and save from waste, to plan and establish a policy which shall insure a sufficiency for those now living and at the same time provide for those who shall succeed us, is both a public and a private duty. It is that unselfish principle of right and wholesome economics which insures prosperity to the nation and peace and plenty to the individual. No system of government is right which produces waste by providing extravagant excess of luxuries for the few and makes it impossible for the many to get the needed comforts of life. And no system of government is right which does not render it easily possible for our children and our children's children to obtain the use and benefits of a sufficiency of all these God-given natural resources. The old questions of "Am I my brother's keeper?" and "Who is my brother?" which were taught two thousand years ago must be answered in enactment of law which will automatically enforce these humane principles when we forget.

UTILIZING POWER NOW WASTED.

There are natural resources that can be acquired and reproduced, some by annual crop growth and some by much longer periods of crop growth. There are other natural resources that though abundant for this generation are limited and can not be reproduced. All food, clothing, and wood products can be regrown. The mineral and metal products can not be reproduced. Air and water are inexhaustible. Wood products have many substitutes for the construction of dwellings and other buildings and for various mechanical purposes. Steel and concrete are the prevailing substitutes. Coal, oil, and gas have electricity as a substitute for heat, light, and power. Electricity is

most economically produced by the water power of the country; and is made the agent for extending and transmitting the energy of this great natural resource to great distances by electric wires running in every required direction. There is going to waste, on its way to the sea, water power enough in this country, if harnessed and converted into electricity, to light and heat the homes and turn the wheels of the factories and run every street car and railroad train in the United States. These water-power sites on the public domain should be held for the people and leased for their benefit to power companies at a fair rental. The State can condemn private property for public uses, under the right of eminent domain; and sites not on State waters and not now utilized should be acquired by the State for the use of the people. This water power of the rivers and streams can be used over and over again, being multiplied as many times as the water can be raised by a succession of dams. Thus, while the wheels do not turn from the water that is passed, other wheels all along the stream below do turn, and then the sun pumps the water back again to its source, and the same process is endlessly repeated.

RIGHT PRINCIPLES OF CONSERVATION.

The practice of forestry and conservation of our timber resources are of immense importance, not only for the intrinsic value of the wood and the lumber but also in many parts of the country for holding back the snows and storing the water at the heads of the streams in the mountains, thus preventing disastrous floods in the country below.

It is safe to say that in all questions relating to the forests and to the timber industry—whether it be tree cutting, tariff, or taxes—they should be judged and settled by and to the best interests

of conservation. If the settlement of the question retards conservation, then the judgment is wrong; if the settlement of the question advances conservation, then the judgment is right. It is ruinous to conservation to make its principles and policies political party issues. For they should be accepted as necessary public principles for all political parties for the benefit of the whole country.

The conservation and development of the natural resources of human life, of soils, of forests, of metals and minerals, and of water power and waterways, are a function as properly belonging to the Government for this and future generations in a large way as for the individual citizen in a smaller way. Its principles are as sound and axiomatic as that of the Golden Rule.

FOREST CONSERVATION AS A BUSINESS.

But who shall plant lumber trees? Who shall practice forestry? The planting of fruit trees is a commercial business, as they mature to bear fruit in from four to twelve years. Capital invests, choosing favorable soil and climate; and the harvest comes two score or more times during the life time of him who plants; and he sees and enjoys the fruit of his labor. But with lumber trees there is only one crop in a generation. As an investment it is not as attractive, with laws of taxation as they are now, as other opportunities which long experience has proved less hazardous. One must figure compound interest, at say 6 per cent, to make it safely attractive; cost of cut-over lands, cost of setting out trees and caring for them for fifty years, annual taxes for fifty years before the crop is harvested, and taking chances as to the value of stumpage at the end of that time.

The following is a statement handed me by the Hon. Henry E. Hardtner, of the Forest Commission of Louisiana, showing the calculations of the commission, figuring the value of cut-over lands at \$3 per acre and on the basis of a 30-year period.

Assessed value for thirty years
at one dollar per acre and com-
pound interest at 6%-----\$ 1.67

Cost of land-----	3.00
Cost of planting trees-----	5.00
Compound interest for thirty years at 6%-----	37.94
Care of timber at two cents per acre per year, and compound interest at 6%-----	1.67
Total -----	\$49.28

TAXATION AND VALUE INCREASE.

It is estimated there will be 5,000 feet per acre in thirty years' time at a cost of about \$10 per thousand feet. Now in order to induce people to practice forestry the State has enacted a law that the assessed valuation for thirty years shall only be at the rate of \$1 per acre. To obtain the best results by intensive forestry one can not properly trim and care for trees at 2 cents per acre per annum. That is, it will pay to spend more on this work—possibly for the entire 30-year period a total of \$10 per acre, thereby easily obtaining in forty years a yield of 10,000 to 15,000 feet per acre. Figuring that money doubles every ten years, if interest and expenses are compounded at 6 per cent, this would make the timber cost at the end of a 40-year period, with a yield of 10,000 feet per acre, \$11.50 per thousand. I believe that land in Louisiana can be bought that will in fifty years produce an average of 20,000 feet per acre, and with favorable taxation for the entire period at a cost of \$10 to \$12 stumpage, according to the quality of soil and the cost of land as to its value for other crop purposes. The tax should follow the saw at the harvesting of each crop.

FREE GROWTH UNDER REGULATION.

In European countries it has been found most economical that the Government or State shall grow the forests. The State pays no taxes, can get the money at a lower rate of interest, and can establish and maintain a uniform system of forestry under the charge of educated and trained experts. When the crop has matured to a point where cost has met value of product so that it would be at a sacrifice of profit and a waste for even the State to maintain

carrying charges the trees should be harvested, the land grubbed of its stumps and the process repeated for another crop. It is surprising how much can be grown on an acre by intensified forestry, where trees of the same age are planted in rows or at proper distances from each other according to contour and nature of the ground, and are intelligently pruned and tended.

On the Pacific Coast it has been ascertained that a thousand feet per acre per annum can be grown, or 40,000 feet per acre in forty years. In the Vanderbilt forest near Asheville, N. C., I saw stands of white pine ten inches to one foot in diameter which had been grown from the seed in eighteen years. In the different States, soil should be selected for forestry which is not so well adapted for annual crops of agriculture, yet well adapted for tree growth. And the work should be done by the State.

THINNING FORESTS ECONOMICALLY.

A lumberman may be a good mechanic and a man of excellent judgment as to how to cut and saw the tree into lumber so as to secure the greatest commercial value, yet he would not necessarily make a good forester. They are two distinct occupations. It is most naturally the province of one to furnish the capital and skilled knowledge to grow and care for the forests and then to dispose of the raw material to the other, the skilled manufacturer, to prepare for the market. We can never make it profitable to grow trees to an age of the present old-growth forests of 150 years or more. But these old trees have obtained their growth; they

have long been ripe for the harvest; and a rapidly increasing population and the demands of other countries are calling for the marketing. Most of this acreage is not improving. In most instances, at the best, it is only holding its own. Growth of mature trees has stopped; and the trees are dying fully to offset the gain of new growth; and when fires come the old and the new growth are both swallowed up in flames. The Forest Service is doing most valuable and valiant work in protecting and saving the forests from disastrous fires. The Government appropriations for this work should be most liberal and should be supplemented and aided by appropriations and appointment of forest field men and fire wardens from each State.

CONSERVATION A GENERAL BURDEN.

We are far behind the older nations in the practice of conservation. But we have awakened in time. It is not now too late to care for the present and insure for the future. We have had too great an abundance. In the early history of our country we had to cut down the forests and clear the ground for farm crops; now we have arrived at the point where we have got to conserve and improve the soil and plant and care for the forests. We are going to become great through thrift and saving. And our people shall not want. Not any one class but each and all should bear their just share of the public burden of conservation, restoration and protection, and every class of property should be taxed fairly for the public cost in this great work of the present in providing for the future.

*An address at the meeting of the National Lumber Manufacturers' Association at Kansas City.

FORESTERS AND LUMBERMEN COMING.

Doubtless the largest number of foresters and lumbermen who have ever attended any meeting will be present at the fifth annual meeting of the National Conservation Congress in Washington, D. C. on Nov. 18, 19 and 20. Many of them have attended the previous meetings of the Congress, but the fact that the coming meeting will devote so much time to forestry and lumbering problems, and that the reports of the committees now investigating these problems will be so important, will attract an unusually large number.

FORESTRY CONFERENCE IN NEW HAMPSHIRE

A large attendance is expected at the midsummer forestry conference at Lake Sunapee, N. H., on July 22, 23, and 24 when the directors of the American Forestry Association and a number of guests, the Society for the Protection of the New Hampshire Forests, the Northeastern Foresters, the New Hampshire Timberland Owners' Association, the Massachusetts Forestry Association, and the New Hampshire State Forestry Commission will gather and hold joint meetings.

The revised program for the three days' session is as follows:

TUESDAY, JULY 22

Trip up Sunapee Mountain.

4:00 p. m. Tea at the Lake Sunapee Yacht Club, which is headquarters.

8 p. m. Hon. F. W. Rollins presiding. Addresses by Hon. Henry S. Graves, Chief of the United States Forest Service; Dr. Henry S. Drinker, President of the American Forestry Association; Dr. B. E. Fernow, Dean of the Forestry School, University of Toronto; Professor Filibert Roth, of the University of Michigan; Dr. J. T. Rothrock, of Pennsylvania Forestry Commission; Hon. Robert P. Bass, of New Hampshire.

Hon. Lindley M. Garrison, Secretary of War, will be present, if possible. Mr. Garrison is President of the National Forest Reservation Commission under the Weeks Act. Governor Wm. M. Haines of Maine will attend.

An original poem, "Save the Forests," will be read by Miss Edna Dean Proctor. Mr. Ernest Harold Baynes, the naturalist, will make an address with lantern pictures, entitled "Wild Animals in New Hampshire."

WEDNESDAY, JULY 23.

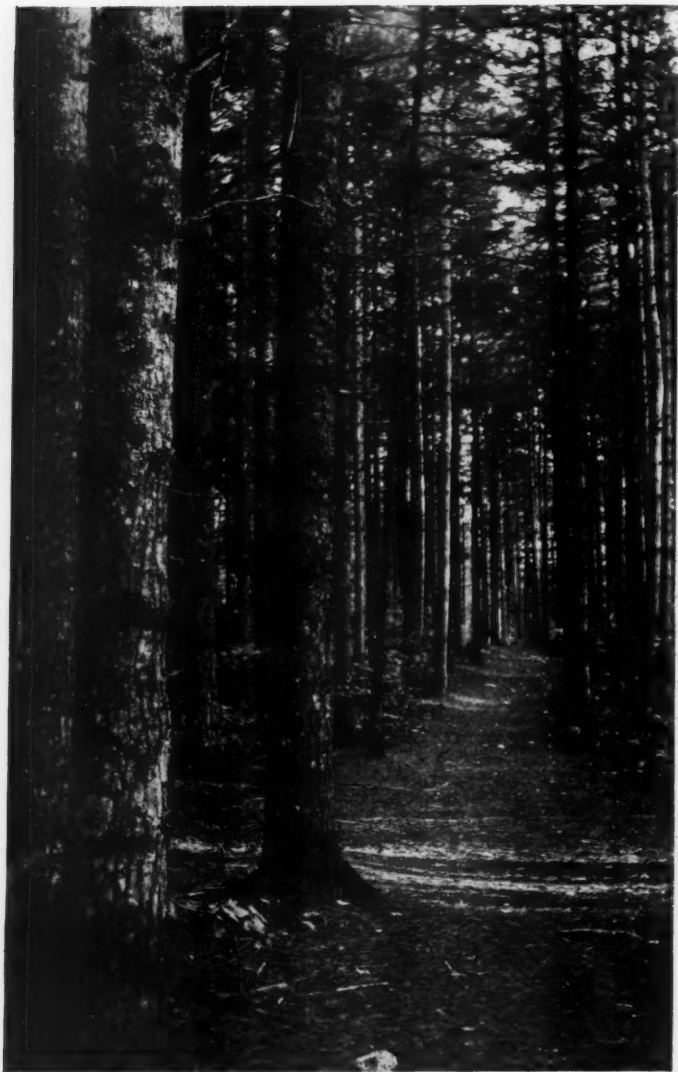
9:30 a. m. "The Influence of Forests on Water Flow." A number of experts have been invited to speak on

this subject, including E. M. Griffith, State Forester of Wisconsin; George Otis Smith, Director of the Geological Survey; Professor George F. Swain, President of the American Society of Civil Engineers; William L. Hall, of the United States Forest Service. Among those who have been invited to take part in discussion are: Allen Hollis, of Concord, N. H.; C. H. Tenney, of Springfield, Mass., and representatives of the Chamber of Commerce in Manchester, N. H., who are interested in the extension of navigation on the Merrimack River.

2:30. The acquisition and management of State forests. The President of the New Hampshire Forestry Commission will preside. Addresses have been requested from Mr. Graves, head of the Forest Service; Dr. Rothrock, of Philadelphia; Mr. Pettis, Superintendent of Forests in New Hampshire; Mr. F. W. Rane, State Forester of Massachusetts, and the State Foresters of Maine, Vermont, Connecticut, New Jersey and Maryland. Professor Filibert Roth, Director of the School of Forestry, University of Michigan, and Professor J. W. Toumey, Director of the Yale Forest School, will take part in the discussion.

4:30. Tea at the Sunapee Yacht Club, with an address by Dr. John D. Quackenbos on "The Forests of Lake Sunapee."

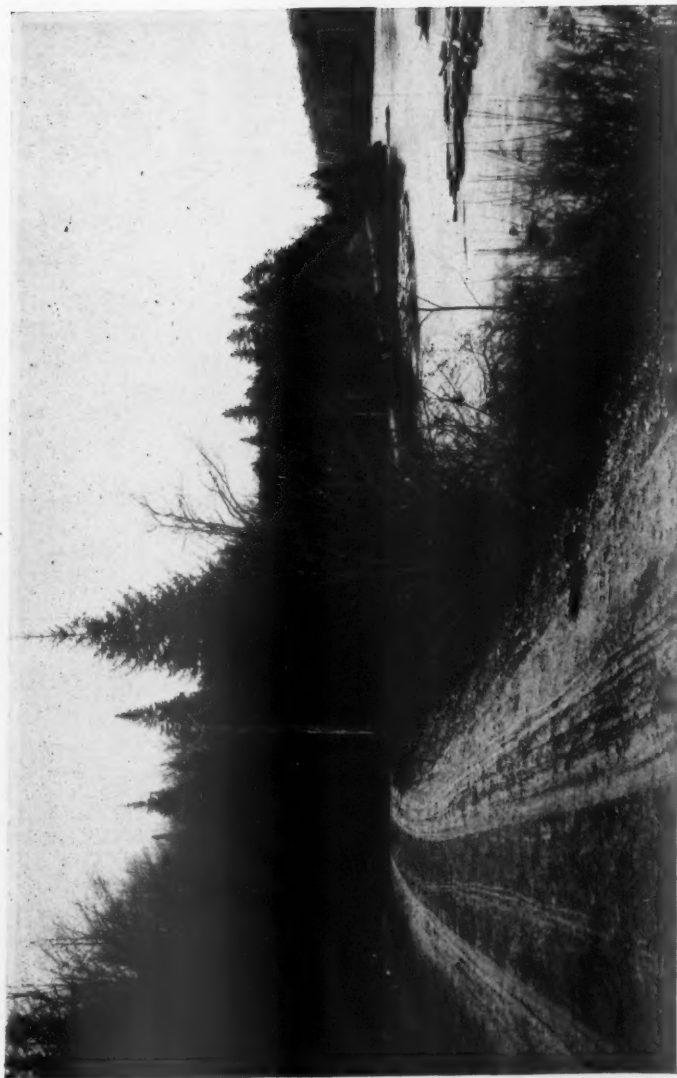
8:00 p. m. A meeting under the direction of the American Forestry Association, Dr. Henry S. Drinker presiding. Addresses will be made by Dr. Drinker, Mr. Charles Lathrop Pack, President of the National Conservation Congress; Prof. H. H. Chapman, of the Yale Forest School, and others. Thomas Nelson Page, a director of the Association and recently appointed as Ambassador to Italy, will attend if possible and make an address.



THE CATHEDRAL PINES AT INTERVALE.

Held by several private owners. One part was recently cut off.

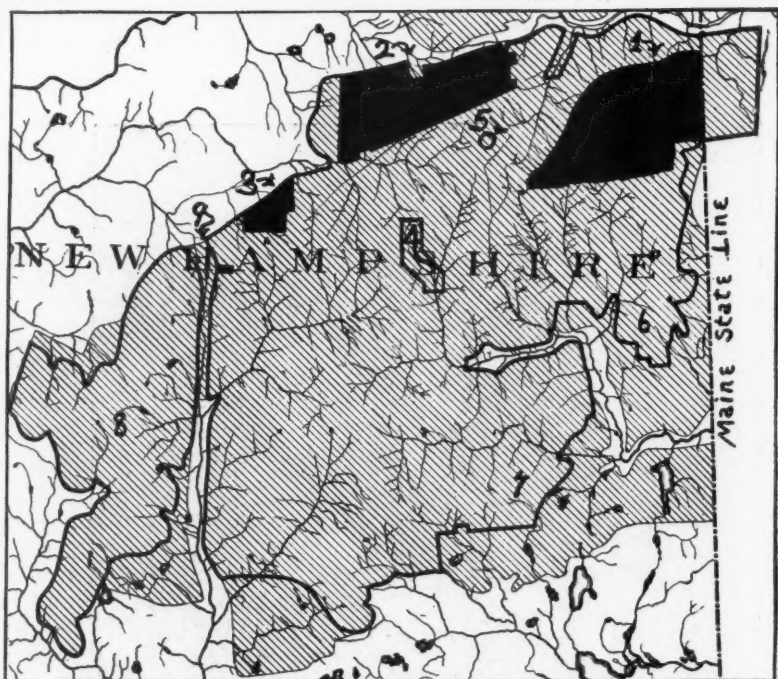
Photo by George T. Barnes.



THIRTEEN MILES OF UNBROKEN WOODS ALONG THE ANDROSCOGGIN RIVER

The owner, Mr. David Pingree, at the request of the Society, will prevent cutting, during his lifetime, on a strip eight rods wide throughout the thirteen miles.

Photo by Guy L. Shorey.



WHITE MOUNTAIN REGION

(within black lines)

1. Bean's Purchase.	35,000 Acres
2. Northern Slopes.	30,000 "
3. Franconia Tract.	7,000 "
4. Crawford Notch, N. H. State Reserve.	4,000 "
5. Mt. Washington.	
6. Mt. Kearsarge.	
7. Mt. Chocorua.	
8. Mt. Moosilauke.	
9. Franconia Notch.	



Blank portions represent lands purchased. Shaded portions available non-agricultural lands.

THURSDAY, JULY 24.

9:00 a. m. Annual meeting of the Society for Protection of Forests. Reports will be presented from the treasurer and the forester.

10 a. m. An address by Dr. B. E. Fernow, who will outline a plan of co-operation in forestry work to meet the needs of the future. Elwood Wilson, Forester of the Laurentide Paper Company of Canada, will speak upon "Commercial Forestry," and will outline the influence of the tariff changes

between the United States and Canada upon forest management.

Following these addresses a symposium will be held for general discussion. Professor Charles J. Bullock, of Harvard University, has been invited to take part and speak upon "Taxation of Forests."

WHAT THE NEW HAMPSHIRE SOCIETY HAS DONE.

As the midsummer meeting is to be held under the auspices of the So-



THE CARRIAGE ROAD UP MT. WASHINGTON.

The State Road through Kinsman Notch is equally attractive. It requires a state appropriation to make the Kinsman Notch road passable.

Photo by Guy L. Shorey.

ciety for the Protection of New Hampshire Forests, it is interesting to know what this organization has accomplished in the eleven years of its existence. A review of the work done is contained in the annual report for 1912, which was recently issued. This says in part:

"The Society first suggested a National Forest in the White Mountains. After ten years of hard work the Weeks Bill was passed by Congress, establishing a National Forest in the White Mountains and the Southern Appalachian Mountains. To this measure the Society gave unflinching attention. The final vote was a popular triumph, secured in spite of the active opposition of the political leaders of both parties in both branches of Congress. The Society sought and obtained the co-operation of national scientific and educational associations. It invited and secured co-operation of governors and legislators in distant States, and assisted in the national campaign which resulted in an act enabling Congress to purchase land in the several States to protect the headwaters of navigable streams. In addition to the 72,000 acres approved for purchase by the Federal Government at the North, 212,000 acres have been approved in the Southern Appalachians.

"The Society not only originated the suggestion for the purchase of the Crawford Notch by the State of New Hampshire, which is being accomplished, but it has advocated persistently the policy of extending the State holdings of forest lands beyond the limited area in which the Federal Government is making purchases. Public ownership, which has been adopted as the policy of most of the progressive States in the Union, is the only means of controlling the growth on wild lands.

"From its inception the Society advocated the reorganization of the Forestry Commission, the better protection of the forests of the State from fire, and the employment of a State Forester. These have been accomplished.

"The residents around Sunapee Lake have purchased the top of Sunapee Mountain, 656 acres, and have re-

quested the Society to hold it as trustee. By means of a legacy of \$5,000, left by Miss Caroline Martin, of Dover, and other generous contributions from friends of the Society, the timber on 148 acres surrounding Lost River was purchased. During the eleven-year period, three gifts of forest land have been made to the State of New Hampshire, and still others to the Appalachian Mountain Club. The Society urges the extension of holdings of this kind. They all look forward to the time when not only the forests shall be producing the needed timber supply and giving protection to the flow of streams, but also the beauty of the many places of unusual charm and attraction in New Hampshire shall be protected.

"While the Society has upwards of \$15,000 invested in forest property, this is not revenue-producing, and cannot be so for a number of years, if ever, because the property is located upon prominent sites, where even the mature trees are important from a scenic point of view. Four thousand dollars, a portion of the legacy by Mrs. Julia Thayer, of Keene, has been invested, and produces an annual revenue of two hundred dollars. The work of the Society has now grown to such a point, and its usefulness has been so demonstrated, that its Executive Committee urges the enlargement of its endowment by direct gift or by bequest, in order that its educational work and direct purchase of forest lands in places of special importance may be carried forward. Members of the Society are urged to use their influence in this direction.

"During eleven years the Society has employed a forester whose advice and services have been given freely to members of the Society and others. Many thousands of acres have been examined. On most of the areas the owners have been glad to carry out the advice given. In time, this must result in a very material increase in forest revenues throughout the State.

"From the beginning, the Society has held public meetings in towns throughout the State. By means of photographs, lantern slides, specimens and demonstrations, the work has been



FOREST FIRE ON THE FOOTHILLS OF KEARSARGE MOUNTAIN.
Near Intervale. Fire consumes the soil on the Mountains, which is inflammable, as well as the forest. More than 200,000 acres have been burned in the Mountain region. The State Forester's work should be strengthened.



THE SLASH ALONG THE SHELBURNE ROAD.

This picture was taken from the road and shows the fire menace. The entire country-side is in danger. A law should require tops to be removed along the highways.

Photo by Guy L. Shorey.



PRIMEVAL FOREST ON MT. MADISON.

A part of the National Forest in the White Mountains. 80,000 acres have been acquired.

Photo by Guy L. Shorey.

carried forward. This has resulted in a marked and favorable change of public sentiment towards forestry, so that now four trained foresters are employed in the State: the State Forester, the Professor of Forestry at Durham, the Forester of the Timberland Owners' Association, and the Forester of the Society, besides many trained assistants working in the State nurseries, and in fire protection.

"The influence of the Society has been cumulative, and has resulted in the highest form of accomplishment, namely, legislation. Not only has the Society helped in the passage of the Weeks Bill, but also at Concord many legislative enactments have been secured. These include laws to establish better fire protection; to employ the State Forester; to establish a State Nursery of forest seedling trees; to provide for the suppression of brown-tail and gypsy moths; to secure the repassage of the act for protection of shade trees along the highways, which had been declared unconstitutional, and to purchase Crawford Notch.

"In order to protect the forests in New Hampshire, toward which a beginning only has been made, the Society desires to accomplish the following results:

RESULTS TO BE ACCOMPLISHED.

"(1) To further enlarge and strengthen the work of the State Forestry Commission.

"(2) To enlarge the forest areas, held directly by the State government. The policy of State forests should become thoroughly grounded in public confidence.

"(3) To co-operate effectively with the Government officers in the purchase of the National Forest in the White Mountains.

"(4) Our system of town Government lends itself admirably to the extension of properly managed town forests, which should be no less profitable here than in foreign countries. Our New Hampshire towns own already nearly ten thousand

acres. What more notable monument can a man leave his town than a forest whose revenue will be continuous?

"(5) In order to secure town forests and to encourage better forest care everywhere the Society will aid in establishing local branch Forestry Associations throughout the State.

"(6) To encourage an equitable system of forest taxation, the Society earnestly recommends that the constitution of the State be so changed as to enable the legislature to classify forests separately from other property, and thus do away with the false and unequal system by which the forests of the State are now assessed.

"The tax amendment recently submitted to the people at the November election failed to pass by a narrow majority. It would have permitted the legislature to classify separately for purposes of taxation, forests, personal property, and savings-bank deposits. A two-thirds favorable vote was necessary. The result stood 23,144 favorable and 12,636 unfavorable. Sixty-five per cent was secured instead of the necessary sixty-six and two-thirds per cent. The Society urges resubmission of this amendment to the people of New Hampshire. It is legal to call the Constitutional Convention together again until June, 1913.

"(7) To urge upon all woodland owners a wise use of their timber with a view to larger future income. Such use will lengthen the term of forest production and make more stable the industries dependent upon timber.

"(8) The Society will stimulate in every way possible the habit of planting trees throughout the State, and of creating new forests to take the place of those cut off. In no other way can the stability of our industries permanently be maintained. There are large areas of waste land in the State that should be producing an excellent revenue from forest growth.

"(9) The Society will strive earnestly to protect permanently the many points of special interest and scenic beauty in New Hampshire. It seeks



THE ROAD IN SHELBURNE VILLAGE THAT WAS DESPOILED.

The pine trees in the middle part of the picture were cut, and the tops left, a serious fire menace. A law should require tops to be removed along the highways.

Photo by Guy L. Shorey.

to protect every prominent mountain in the State."

THE TAXATION AMENDMENT.

Of the taxation problem in the State the Society's report says:

"During the year the Tax Commission, appointed by the last legislature, undertook to enforce the law to tax forests equally and proportionally with other property. This greatly raised the valuation on the woodlands in the State, and particularly upon the smaller lots owned throughout the central and southern portion of the State. The heavy burden which is imposed by the Constitution of the State is entirely unjust. Growing wood and timber are property upon which an income cannot be secured until maturity, which is usually after a number of years. The annual rate of growth is small. If the tax-rate is greater than the rate of growth, the tax amounts to confiscation, which is often the case. To tax forest property equally with all other property every year is unsupportable and cannot be enforced. Assessors, everywhere, must of necessity evade

this law, and the result is that we have a great inequality and unfairness. As a rule, forests have been assessed far below their true value, which is the reason that greater protests have not been heard.

"The effort to change the Constitution failed by a narrow margin at the November election. The Society made a vigorous effort to secure the passage of the third proposed amendment. This would classify forests separately for purposes of taxation; also personal property which now largely escapes taxation owing to the high rate of taxes imposed under the present Constitution. This amendment also would have legalized the present low tax on savings-bank deposits. To put all of these measures into one short sentence caused it to be largely misunderstood. Many people thought there was a trick. Nevertheless, the proposed amendment failed by a very narrow margin. Two-thirds, or sixty-six and two-thirds per cent of all votes cast, were required in favor of the amendment in order to secure its adoption. Sixty-five per cent of the votes cast were favorable."

FOREST FIRES IN ALASKA

TELEGRAPHIC reports to the forest service regarding the serious fires both in and outside the Chugach National Forest in Alaska are to the effect that forest officers were on the ground within a short time and are believed to have brought the fires under control, but not before several million feet of standing timber and a considerable amount of cut logs had been destroyed. The Interior Department will reimburse the forest service for its expenses in fighting the outside fires.

In connection with these fires it is pointed out that the forest service is the only organization on the ground to prevent the destruction of public timber in Alaska. The Chugach forest contains 28 billion feet of timber and portions are subject to severe fire damage. The effects of past fires are in evidence, some dating back to the days of Russian occupancy more than 50 years ago. It has been held by opponents of national forests in Alaska that there is no fire risk and no timber worth protecting.

MEMBERS INVITED TO ATTEND THE MEETING.

Members of the American Forestry Association are invited to attend the midsummer meeting of the directors at Lake Sunapee, New Hampshire on July 22 and 23. There are a large number of members in New Hampshire, Massachusetts and New York who live within such a convenient distance of Lake Sunapee that they can readily reach it. The directors will be pleased to have them attend. Write to the Secretary for a program.

PENNSYLVANIA'S TIMBER TAXATION BILLS

By DR. J. T. ROTHROCK.

THE first duty of a State is to perpetuate itself. No policy which leads to this can be wrong, none which prevents it can be right. The State which comes short of prosperous perpetuity comes short of everything, for this is the object of government and on this the ultimate prosperity of the individual depends.

For generations, Pennsylvania gave away her forest-covered acres for a nominal sum, to entice settlers. Then she taxed the forests until it was cheaper to cut them than to keep them. Where the denuded tracts possessed neither agricultural nor mineral value, the prosperity founded in timber vanished with the timber. Bankruptcy faced hundreds of square miles—because the taxes failed to meet the expenses of the local governments.

All this was predicted, and so clearly pointed out that only those who did not want to see it failed to recognize the coming disaster.

Year after year, attempts had been made to avert the danger. First, relief was sought by abolition of taxes on standing timber. This method was pronounced unconstitutional and never reached the legislature. Then came the plan of paying the taxes and afterwards receiving a rebate on them. This method was enacted into laws and rebates paid in a few counties; but it failed of general acceptance because the rebate granted was usually simply added again in the form of increased tax, and the Court ended the farce by declaring the law unconstitutional. The principle was tried in several forms but in each case the end was the same.

THREE TIMES DEFEATED.

In 1907, 1909 and 1911 bills which placed certain timber lands in a distinct and separate class under a minimum rate of taxation, for the surface, were before each legislature and defeated;

these bills provided that where such lands possessed mineral wealth they could be taxed additionally.

It was a new departure in legislation. The problem was broader than its friends thought and the bills presented were crude, in part, though much thought had been bestowed upon them. Perhaps, after all, their defeat was a blessing in disguise, because their failure simply incited more persistent effort to revise, perfect and offer them again. The idea of ultimate failure never was entertained.

The same principles were presented to the Pennsylvania Legislature in 1913. This time there were three bills instead of two. The third one provided that the State should recompense the counties, in which the Auxiliary Forest Reserves created by the other two bills were located, for loss of tax, by lowered rate of assessment of these lands. This was Mr. S. B. Elliott's wise application of a principle thus stated in 1894:

"The water which turns our factory wheels and which is used by our larger towns and cities; whence does it come? As a rule, from forest-covered hillsides in remoter parts of the State. The mills, towns and cities seldom pay anything for it until it reaches their seats. The men who own the land pay the taxes and receive actually less from it than those who pay nothing for it. Put the proposition in its baldest form: The City of Philadelphia pays nothing for an element which is essential to its life and without which it could not endure a day, until it reaches the city limits. Another portion of the community is taxed that we may receive our water free. Is this fair? . . . It is not too much then to say that the State at large is the beneficiary of the woodlands. Nor is it too much to ask that legislation be granted by which such counties of the State as endure a hardship by removal of taxes from their timber lands should be relieved by the State

to the extent of their financial loss from this cause.

"When timber comes to be removed it ceases to be a purely public benefit. It enters the domain of individual or corporate trade and should be taxed accordingly."

The Auxiliary Forest Reserve laws, known in Pennsylvania as the Alexander-Williams Bills, are given in full at the end of this article.

THE NEW BILLS APPROVED.

It is probable that the principles involved in these measures will be ultimately, generally recognized as wise and equitable. To say that they already have a considerable following would hardly express the whole truth, as a no less influential body than the American Conservation Association has practically accepted them as one of the bases upon which timber conservation must rest, and the New York Legislature in 1912 passed the measures which the Pennsylvania Legislature in 1911 defeated, and in 1913 adopted.

We can not claim that no modification or improvement is possible. On the contrary, we are convinced that the details will be changed for years to come, even though the essential principles are unassailable. It is probable, indeed we think it is certain, that other States will adopt these bills, or such modifications of them as the peculiar conditions of such States may seem to require.

The one oversight in our Pennsylvania laws is they fail to state distinctly that no land should, for the present, become part of an auxiliary forest reserve unless it was better adapted to the growth of timber than to any other crop. This, however, is for the present sufficiently safe-guarded by the fact that the State Forest Reservation Commission has full authority to accept or reject any land claiming the benefit of these reserves. It is quite sure that the Commission would reject any high-grade agricultural land. Though this is true for the present, the time must come when a limited acreage of just such land must be accepted in regions which are distinctly agricultural in character.

No Governor of Pennsylvania has ever had a broader, more wholesome concept of forestry possibilities than William A. Stone. It was he who said "The State forest reserves are to be the people's outing grounds, upon which they can enter as owners, and not as trespassers,"—and "if it is a good thing for one county to have a forest reserve," in his judgment "it was good for all." These statements were more than true. They were prophetic. His view included not only the production of timber for the general market, but the farmer's wood-lot, the water-conserving help of the forest, the resting places for the people, which the civilization of the future will recognize as requisite for the health and happiness of the masses. The thought that to purchase land in every county of the Commonwealth cost vast sums did not cloud his vision to the fact that it would ultimately be done.

THE NEXT STEP FORWARD.

Though we can hardly expect the owners of the Auxiliary Forest Reserves to open their acres to free use of the public, we can expect some modification of the laws which will enable the owners of rich agricultural areas to place a portion of their land in forest and maintain it in that condition because of the general good it will work for the entire community. This is the next step the friends of forestry in Pennsylvania must take as they go forward from the vantage ground of these new Auxiliary Forest laws.

It is not likely that there will be any immediate rush by the owners of suitable lands to place them in the Auxiliary Forest Reserves. It is quite as likely that the rush (if there be any) will come from the owners of lands which are too good to come within the intent of the laws, and whose admission would seriously derange the tax system of the State. Indeed, it is actually desirable that these laws come into operation gradually. They involve principles which are new to the American mind. A mutual adjustment of each to the other is important.

It is increasingly clear that it is not

possible for the State to do all the forestry work that it requires. It is equally certain that it is better that a portion of the burden should fall upon the individual. He will be better able to appreciate the magnitude and the difficulties of the task as well as its importance. If every legislator were personally practically interested in the restoration and care of a body of woodland, and thus had the facts brought home to him, there would be less difficulty in securing the appropriation requisite to make real advances and to redeem the forestry department from the charge that it is simply "marking time."

PROSPECTS FOR THE FUTURE.

These auxiliary forest reserve bills can not fail, sooner or later, to interest the land-owning citizen because of his wood-lot. They will lead, beyond doubt, to covering the rough, steep, impoverished hillsides of the farms with thriving, productive forests.

And what, in this respect, is true of Pennsylvania, can hardly fail to be true of every other State in which similar laws are placed on the statute books.

There appears to be, in certain quarters, a growing acceptance of the single tax doctrine, which places the whole burden of taxation upon land. This is not the place to inquire into the wisdom, or equity, of such a measure. It is worth while, however, to say that the antagonism between the single-tax method and the Auxiliary Forest Reserves which *lightens* the burden of taxation on timber land is more apparent than real. Land, as ordinarily held, is dedicated primarily to the advantages of the owner. Whatever benefits accrue to the community at large are mere side issues. Land placed in the Auxiliary Forest Reserves is there simply because it is rendering an essential public service and when it ceases to do this it is removed by law.

THE TEXT OF THE THREE BILLS.

THE FIRST BILL.

An Act to classify certain surface lands as auxiliary forest reserves, to prescribe the terms and conditions for their continuance in said classification or their withdrawal therefrom, and to provide for the expenses attendant thereon.

Senate 190, Mr. Alexander, February 10, 1913.

House 557, Mr. Williams, February 10, 1913.

SECTION 1. Be it enacted by the Senate and House of Representatives of the Commonwealth of Pennsylvania in General Assembly met and it is hereby enacted by the authority of the same, that in order to encourage the growing of such trees now existing, or hereafter produced, as will at the proper age be suitable for merchantable forest products whether such be of natural reproduction or from seed sown or trees planted out or all combined, all surface land which may be set apart according to the provisions of this act and exclusively used for growing such trees is hereby constituted a separate and distinct class of land to be known as auxiliary forest reserves.

SEC. 2. When any owner of surface land desires to have such land placed in the class established by section one of this act, such owner shall notify the State Forestry Reservation Commission of his desire in manner

and form to be prescribed by said Commission. Said notice shall contain a description of the land, its location, boundary, area and character, and shall state as far as practicable the species, character, and condition of the trees growing thereon, and whether they are of natural reproduction or are from seed sown for the purpose or have been set out on said land, or all combined, and such other information as the Commission may require. If upon receipt and consideration of this notice the Commission shall in its discretion deem the conditions such as to warrant action on its part to determine whether such land should rightfully be placed in the class established by section one of this act, it shall cause the same to be examined by some person learned in the practice and principles of forestry and a report made thereon; and if upon receipt and consideration of such report it decides that such land should be placed in the class established by section one of this act, it shall so declare and certify to the Commissioners of the county in which said land is located.

SEC. 3. Upon receipt by the county commissioners of each certificate of the Commission, it shall be their duty at once to place said surface land in the class established by section one of this act, and keep the same therein until the trees growing thereon shall in the judgment of the Commission become sufficiently large and suit-

able for merchantable forest products, or the land be devoted to other purposes, provided, however, that the certificate of the Commission shall not become operative to place said surface land in the class established by section one of this act until the owner of said surface land has agreed in writing with the Commission to care for the trees growing thereon according to the instructions and directions of the Commission up to such time as such trees become suitable for merchantable forest products; and if any such owner at any time fails to care for the trees growing on said land as agreed with the Commission, and due proof thereof is made, the Commission may remove said surface land from the class established by section one of this act. In case of such removal either through failure of the owner to care for the trees, or on his expressed desire for removal before the trees shall have been cut at maturity and tax paid thereon, the county commissioners shall on notice from the Commission proceed to recover from said owner for the use of the county and township by an appropriate action at law if necessary, the difference in the amount of tax which would have been paid by the said owner at the rates established for the years for which recovery is sought, and the rate provided for auxiliary forest reserves, with costs of suit, to be recoverable from the time when such land was placed in the class of auxiliary forest reserves. And the Commission shall remove said surface land from the class established by section one of this act at any time that the then owner shall in writing notify the Commission that he desires such removal. The Commission may in its discretion at the time said surface land is placed in the class established by section one of this act and require the owner to file with the Commission his or its bond of such kind and amount as the Commission shall deem reasonable and sufficient to secure the obligations of such owner under this act.

SEC. 4. Whenever trees growing on said surface land have become suitable for merchantable forest products the Commission shall at the request of the owner or on its own motion make an examination of said land and designate for the owner the kind and number of trees most suitable to be cut if in the judgment of the Commission there be any, and the cutting and removal of said trees so designated shall be in accordance with the instructions of the Commission.

SEC. 5. If the owner of said surface land faithfully carries out the instructions of the Commission with regard to the removal and marketing of such mature or other trees as may be designated in the instructions of the said Commission and shall immediately replant other trees of valuable species, or so protect the young growth that the said land may immediately become covered with young forest growth, and does so with the approval of the Commission, then such surface land

shall remain in the said class established by section one of this act; otherwise, the Commission shall notify the county commissioners that the said land is not being maintained in accordance with the written agreement of the owner and the instructions of the Commission, in which event the county commissioners shall immediately remove said land from the class established by section one of this act. All expenses attendant upon the examination of the said surface land by the Commission shall be paid out of moneys appropriated for the maintenance of the Department of Forestry in like manner as other expenses for maintenance of said Department are now paid.

SEC. 6. The owner of the said auxiliary forest reserves shall at all times have the right to remove therefrom trees or portions of trees which may be killed by fire, thrown or broken by the wind, or injured by other natural causes, and shall under the direction of the Commission be privileged to make necessary thinnings or removal of undesirable species of trees in order to improve the condition of the remaining trees, and under the same direction may be privileged to remove therefrom such timber from time to time as may be necessary and essential for use upon the neighboring cleared lands of the said owner for general farm purposes.

SEC. 7. Any tract of land while remaining in the class of Auxiliary Forest Reserves, as above provided, may nevertheless be sold or incumbered by or through the owner thereof, but no sale or incumbrance, whether voluntary by the owner, or involuntary under any statutory or judicial proceeding whatsoever, whether of any State or of the United States, shall effect a discharge of any obligation imposed under this act, and said land shall be removed from said class only in accordance with the provisions hereof.

SEC. 8. That all acts or parts of acts inconsistent herewith be and the same are hereby repealed.

THE SECOND BILL.

An Act to provide for the Assessment and Taxation of Auxiliary Forest Reserves and the collection, distribution and use of the taxes collected therefrom.

Senate 191, Mr. Alexander, February 10, 1913.

House 558, Mr. Williams, February 10, 1913.

SECTION 1. Be it enacted by the Senate and House of Representatives of the Commonwealth of Pennsylvania in General Assembly met and it is hereby enacted by the authority of the same.

That all surface land which may hereafter be classified and set apart as auxiliary forest reserves in the manner provided by law shall be rated in value for the purpose of taxation not in excess of one dollar (\$1.00) per acre and shall continue to be so rated so long as the said land remains within the class designated as auxiliary forest reserves. Pro-

vided, however, that if the said surface land be underlaid with coal, iron ore, oil, gas, or other valuable minerals, said minerals may be separately assessed. The assessors in the several districts in which such lands are situate shall assess such lands in the manner now or hereafter provided for the assessment of real estate for purposes of taxation as if they had not been set apart as auxiliary forest reserves, and shall make their returns to the county commissioners in like manner as is now or hereafter may be provided by law, subject to exception, appeal, and final adjustment.

Sec. 2. Upon receipt of assessment returns from the various assessors the county commissioners shall reduce in their records, to a sum not in excess of one dollar (\$1.00) per acre, the assessment on all those lands which shall have been placed in the class known as auxiliary forest reserves in accordance with certificates filed with them by the State Forestry Reservation Commission, and the original assessment returns made by said assessors shall be preserved.

Sec. 3. Whenever timber on land which is included in the class of land known as auxiliary forest reserves is about to be harvested the then owner of the timber on said land shall give a bond to the county treasurer in twenty per centum of the amount of the estimated value of the timber to be harvested and to be approved by the court of the county conditioned to pay to the county treasurer within ninety days after harvesting ten per centum of the value of the trees immediately at and before the time of harvesting, which amount shall be ascertained by statement and return under oath or affirmation furnished in triplicate, one to the county commissioners, one to the county treasurer, and one to the Commission, immediately after harvesting, by the then owner of the land, setting forth said value, which sum thus paid shall be divided and distributed by the county treasurer of each county to the county, and to the poor district, the road district, and the school district of the township in which the auxiliary reserve is situate, pro rata based upon the last assessed mileage of taxation for county, poor, road and school purposes within said taxing district.

Such sum of money when ascertained to be due as a tax, by filing of the foregoing statement and return under oath, and as hereinbefore provided directed to be paid to the county treasurer by the owner of an auxiliary forest reserve, shall from the time of such filing be and remain a lien upon the land of such owner until payment shall have been made.

And be it further provided that all moneys received by the boards of supervisors shall be appropriated exclusively to the opening, maintenance, and repair of the public roads, now or hereafter passing through or into said auxiliary forest reserves or upon which said reserves now or hereafter may abut; and in the event that no public highways pass

through or into said reserves or none of said reserves abut on such highways, then said moneys shall be used for general township road purposes.

Sec. 4. Should the county commissioners be dissatisfied with the return made as hereinbefore provided in section three hereof, the court of common pleas of the proper county, on petition of the commissioners, shall appoint a board of three appraisers who shall go upon the land in question, estimate the quantity and value of the trees immediately at and before the time of harvesting, and make a return thereof to the court which said return shall then be made the basis upon which each owner shall make payment to the respective county treasurers unless changed upon appeal. The said appraisers shall be duly sworn or affirmed before entering upon their work and either party, if dissatisfied with the report of the appraisers, shall have right of appeal to the court of common pleas of the county within ten days after such report shall be filed and notice thereof given the owner. The said appraisers shall be allowed their expenses and a compensation to be fixed by the court, both to be paid by the county commissioners.

Sec. 5. In case of the removal of said lands from the class known as auxiliary forest reserves prior to the maturity of the timber and without payment of the tax of ten per centum of the value thereof as provided in section three of this act, the county commissioners shall on notice from the Commission, ascertain the amount of the taxes which would have been paid by the said owner on the original assessment before the reduction provided for in section two of this Act, adding legal interest from the date when each tax payment would have become delinquent. The said commissioners shall likewise ascertain the amount of taxes which have actually been paid upon the land in question, adding legal interest upon all such payments from the date when paid and certify the result thereof to the county treasurer who shall then proceed in the manner provided for the collection of county taxes under general laws, to recover from such owner the difference between the two amounts, with costs. Such difference so ascertained to be due as tax as aforesaid, shall be and remain a lien upon the land of such owner until payment shall have been made.

If such land shall be so removed from said class after the due cutting of a matured crop and the payment of tax thereon, the owner shall in that case not be liable for such past assessment, but the land shall thereafter be liable to assessment and tax as all other land not classed as auxiliary forest reserves.

Sec. 6. This act shall take effect only beginning with assessments made for the purpose of levying taxes for the fiscal year one thousand nine hundred and fourteen.

THE THIRD BILL.

An Act providing a Fixed Charge on Land

Classified as Auxiliary Forest Reserves and the Distribution of the fund thus set aside for school and road purposes.

Senate 192, Mr. Alexander, February 10, 1913.

House 559, Mr. Williams, February 10, 1913.

WHEREAS, By existing law the State forest reserves are subject to an annual charge of two cents per acre for the benefit of schools and two cents per acre for the benefit of roads in the respective districts in which said reserves are located; and

WHEREAS, It would be a hardship to withhold from school and road districts the taxes which would otherwise be collected from land classified as auxiliary forest reserves; therefore

SECTION 1. Be it enacted by the Senate and House of Representatives of the Commonwealth of Pennsylvania in General Assembly met and it is hereby enacted by the authority of the same.

That all lands which shall hereafter be

classified as auxiliary forest reserves shall be subject to an annual charge of two cents per acre for the benefit of the schools and two cents per acre for the benefit of the roads in the respective districts in which said reserves are located. Said charge is hereby made payable by the State.

SEC. 2. The State Forestry Reservation Commission shall certify to the respective school districts and road districts throughout the Commonwealth in which auxiliary forest reserves are located, the number of acres thus set apart and classified in each district and the charge against the same, and shall furthermore certify to the State Treasurer the number of acres, as aforesaid, and the charge against the same in favor of the respective school and road districts. The State Treasurer shall, upon the approval of the proper warrants of the Commission, pay to the several school districts and road districts the amount due the same from the Commonwealth as derived under this act.

HAVE MR. PINCHOT'S APPROVAL

G IFFORD PINCHOT, who has been appointed chairman of the committee which is to investigate forest taxation problems for the coming session of the Conservation Congress to be held in Washington on November 18, 19 and 20, his being one of the ten investigating committees of the Congress whose work is being financed by the American Forestry Association, has expressed his gratification over the three forestry taxation bills recently passed by the Pennsylvania State Legislature and signed by Governor Tener.

Mr. Pinchot said of these bills: "The friends of Forestry in Pennsylvania are to be congratulated, that after working through four successive legislatures they have succeeded in having passed three bills on Forestry which mark a real advance. These bills, drawn by the Pennsylvania Forestry Association and the Pennsylvania Conservation Association, embody the results of the study given to the subject of forest taxation during recent years. The policy these

bills enact into law includes a low annual tax on private forest lands voluntarily put under the supervision of the State, coupled with a deferred tax on the value of the timber, to be assessed and paid when the timber is cut, on the basis of a percentage on the yield.

"Pennsylvania, with her million acres of State forests and her honorable forest history, has long been in a leading position among the States. This position the State has done much to strengthen and maintain by the present legislation."

Mr. Pinchot's committee will divide its work of investigation in four sections, the existing tax laws and their influence on forest management; the basic principles of wise forest taxation, with definite suggestions for legislation; forest taxation in other countries; and bibliography for students of forest taxation.

The relation of Pennsylvania's new laws to forest taxation problems in other States will be considered by the committee.

ATTACK ON THE FOREST SERVICE

ANOTHER attack has been made on the Forest Service. This time it was by Congressman William E. Humphrey of Washington, and was made in a speech in the House on June 2. He makes practically the same charges as have been made in the past. There is nothing new in them. They have been answered on several occasions in so satisfactory and convincing a manner that little more has been heard of them. Despite this, it has come to be expected that fresh attacks on the Service may be anticipated at every session of Congress.

In but one way do these attacks serve a useful purpose, and that is in keeping before the people of the whole country the fact that the Forest Service is doing a good work and doing it well and that in moulding its forest policy for the greatest benefit for the greatest number, it naturally antagonizes a few people. However, the number of those who oppose the Forest Service policy is growing less and less each year owing to the increasing appreciation of the value of properly conserving the national forests, and the growing recognition of the fact that the policy of the Forest Service is, under all existing conditions, the best policy that can be observed.

Chief Forester Graves makes a statement which deals with several of the assertions in Mr. Humphrey's speech. Mr. Graves says:

"There is no danger of cutting off the national forests too rapidly, nor will our sales strengthen the control of the lumbering industry by a few powerful companies. In every individual sale specific provisions are made to safeguard the public interest in both these particulars.

"Not long ago the policy of conservation, as applied to the national forests, was supposed to mean that the Government's timber resources were in-

definitely tied up. Now the fear is expressed that we are cutting too much timber—the other extreme. Because the Forest Service is advertising widely by commercial methods its more extensive sales and securing the utmost possible competition, some people have apparently jumped to the conclusion that the Forest Service aims to cut off all the National Forest timber within a few years. Or it is assumed that we are making sales chiefly to the larger lumber companies, and thereby playing into the hands of big lumber interests.

"The function of the Forest Service is primarily to avoid just those dangers; the evils of unscientific lumbering and the fostering of monopoly. How these evils are guarded against is illustrated in our recent sales.

"The Forest Service recently advertised about 245 million feet of timber on the Kaniksu National Forest in the northwest corner of Idaho, the first large sales in this locality. The Kaniksu Forest contains, as a matter of fact, nearly 2,730,000,000 feet of merchantable stumpage. Ten years will be required to cut the amount advertised, which is only one-tenth of the total stand on the forest. In other words, about one per cent of the timber on this forest will be cut off annually, no more than is being produced every year by growth. The timber advertised has been awarded to two relatively small local lumber companies, which have no affiliations with large timber corporations and own but very small quantities of timber themselves.

"A number of recent sales have been made on the Whitman National Forest in the Blue Mountains of Northeastern Oregon. Within the last three years nearly 262,000,000 feet have been contracted for on this forest. From seven to ten years will be required to cut this timber, which is less than $7\frac{1}{2}$ per cent of the amount on the whole forest. The Whitman timber which has been sold is

split up into four separate contracts, of from 56,000,000 to 73,000,000 feet each, to four separate and independent local companies. This can hardly be called promoting a monopoly.

"A number of smaller sales have been made in the same general region to different local lumber companies. For example, we have made one sale of 36,000,000 feet on the Lolo National Forest in Western Montana, out of a total stand of over 2,000,000,000 feet. Another sale of 65,000,000 feet has been made on the Columbia National Forest in Washington, where we have altogether nearly 7,000,000,000 feet of merchantable timber.

"To utilize the annual growth of wood on the National Forests the Service is endeavoring to increase the amount of its sales and hopes to soon reach an annual business of 3,000,000,000 feet, which is about half of the estimated annual growth on the forests. Small sales are always made wherever possible, and in making large sales the amount disposed of to a single purchaser is no greater than will justify the investment necessary for logging improvements. Sales to companies which have large holdings of their own are not made if there is any other demand for the timber or if a monopoly would result."

NO TIMBER MONOPOLY

IN a sale of 50 million feet of national forest timber to the Mount Graham Lumber Company, of Thatcher, Arizona, a contract has been entered into which, Forester Graves says, contains effective safeguards against possible monopoly. The timber is located on the Mount Graham Division of the Crook National Forest and flumes will be constructed by the company for taking the lumber from the mountain into Gila Valley. Under the terms of the sale these flumes, which will form an outlet for the Mount Graham Range timber generally, are to be available for the use of the Government or of any other purchasers from the Government.

The timber contracted for consists chiefly of Douglas fir and Engelmann

spruce, with small quantities of western yellow pine, white fir, and Mexican white pine. The initial price of \$2 per thousand feet board measure is subject to readjustment in accordance with market values at the end of three years, the contract period extending over six years.

A feature of the sale is the fact that the lumber will be used solely to supply the needs of the local market, which consists in part of the agricultural districts developed along the Gila River, but chiefly of the large copper mines at Globe, Clifton, and Morenci. This market has hitherto been supplied almost exclusively by lumber produced on the northern Pacific coast, shipped by steamer to San Pedro, California, and thence inland over the Southern Pacific.

MEMBERSHIP GROWING STEADILY.

The members of the American Forestry Association will be gratified to know that the membership of the association is growing steadily and that there is a very noticeable growth in the interest taken in forestry throughout the United States. This growth in membership will in a short time make the association one of the most powerful and influential of any devoted to the public service, and able to do much towards securing the kind of scientific forestry which the country so badly needs.

CLAIMS THE LARGEST OAK.

James McCreary of Washington who has recently been visiting his brother's farm near Lancaster, Penna., says that he believes the largest oak in the world is growing there. He says that two feet from the ground the tree measures twenty-seven feet in circumference and from east to west the branches span 138 feet.

A NEW VIEW OF EARLY BRITISH FORESTRY

By J. S. HOLMES

IT has generally been maintained and taught in regard to the history of British forests and forestry that in early times the forests were valued entirely as coverts for game and that the English kings and nobles reserved and administered them with harshness and even cruelty for the sole purpose of furnishing themselves with the products of the chase. This view is expressed well by Dr. Fernow in his "History of Forestry." In speaking of the setting aside of hunting reserves, "forests," "chases," "parks," and "warrens" by the Norman kings, he says they "not only increased the lands under 'ban,' but they increased also in a despot manner the penalties and punishments for infraction of the forest laws. * * * Whole villages were wiped out, or lived almost in bondage to satisfy this taste for sport."

In an intensely interesting history of early England, entitled "The First Twelve Centuries of British Story,"* the author, Mr. J. W. Jeudwine, brings out an entirely new view of the Government's attitude towards the forests, one that might be called the practical or common-sense view. Mr. Jeudwine, who spent fifteen years on a farm in our Southern Appalachians, and so came into intimate touch with the forests themselves and with the users of forests and the buyers and sellers of forest products in a new and sparsely settled country, can perhaps better appreciate the conditions which existed at the time of which he writes than more academic English historians.

Mr. Jeudwine contends that the generally accepted view of the uses of the forests in Norman times, being based largely on "casual notices in the chronicles and annals of monasteries," is for that reason often one sided. The following quotations set forth briefly Mr. Jeudwine's position in his own words:

"A very interesting and important

feature of the Domesday Survey is the enumeration of the forest lands, especially interesting because of the persistent misrepresentation by the monastic chroniclers of the king's dealings with the forests. They speak of them as if these vast reserves of public lands, containing the timber necessary for the whole country for shipbuilding, house-building, mining, manufactures, fencing, and firing, were intended for no other use than to form parks for the sport of kings.

"The first and chief use of forest land was as a breeding place for animals, tame and wild, that could be used for food. The king had 'extensive rights of pasturage over the common forest and waste, a right which the chief of the tribe shared in common with the rest of the tribe.' The Norman kings after the Conquest seized on these wastes and appropriated them to the use of the Crown, enacting severe forest laws to prevent encroachments on their valuable pastures, timber, and game preserves.

"In choosing a place of settlement it was a prime necessity that game should be plentiful and that the country should be suitable for stock-breeding. Grass under trees is not only small in quantity, but lacks sweetness, owing to the want of sun. But with the help of the grass, animals fatten very readily upon mast, so that forests of beech and oak were a most valuable food reserve, especially for swine. The failure of the mast meant such a loss of pigs and cattle as would lead to a famine. It is frequently spoken of as a matter of national concern. The mast was an item of value in the sale of the land, and its value was recognized by the provisions in the forest laws against its destruction.

"The first value of the woods, then, was the fruit of the trees for feed.

*"The first Twelve Centuries of British Story," by J. W. Jeudwine. Longmans, Green & Co., 1912.

"Even in those days choice timber was so scarce that we find it carried great distances for special uses. With the rarest exceptions all buildings were of wood, all implements were almost entirely of wood; it was the only material for firing, for fencing, for all mining operations, for any heating necessary for any infant manufactures. Shipbuilding depended entirely on a supply of good timber in situations convenient to the sea, a sufficient reason by itself if none other existed for William's afforesting of the New Forest district.

"The woods are most minutely described in Domesday, not only for pasture and for building timber but for fencing and for use as brushwood or firewood. '*Silva ad clausuram*,' '*nemus ad sepes reficiendas*' are frequent entries. This assumes split-rail fencing which requires a great quantity of first-class timber, and is the most wasteful item of forest use. To keep our deer a fence at least six feet high would be required, and to keep out hogs, especially 'the wild hog out of the woods,' which to enormous strength adds a very thin frame and a very keen intellect, clean timber which will lie close, and is free from ugly knots which would give a wide space between the rails, is absolutely necessary."

Mr. Jeudwine speaks with close personal knowledge of "the wild hog out of the woods," as he has had to fence against his neighbor's stock. In fact, conditions in Norman England in many ways closely resembled those now prevailing in many of the less developed regions of some of our Southern States. Further on, he says: "As agriculture improved and the area of cleared land increased, the problem took the form which it assumes on all half-developed land, whether the farmer of crops shall fence against other people's stock, or whether each shall keep his stock under fence." This was from seven to eight hundred years ago, in England. How history repeats itself!

Next to food, then, timber was the most important item of personal property in the islands.

"The great acreage of these forest lands, especially as they were unfenced, made their management and control, both as a source of food for tame animals and for the wild animals that sought their shelter, as well as for timber and firewood, one of the most important matters of the king's government."

Mr. Jeudwine does not deny that the forest laws were administered harshly at times, but he maintains that there were high reasons of state for such an administration and warmly defends the Norman kings. "Great as was the public danger," he says, "from destruction of the national supply of food and timber by irresponsible squatters and their dogs, the kings in all parts of the islands had to face a greater danger. Besides being a retreat for wild animals the forests were a convenient rendezvous for dangerous and discontented men, men deprived of crime of the protection of the laws, outlaws." In almost every reign from William I to Henry II an invasion from Normandy comes up the Solent to the New Forest. The kings who were responsible for the repelling of invasions on these islands would not have done their duty if they had allowed these immense wastes to be meeting-places for the disaffected at home and for enemies abroad. That the district was royal forest did not mean that it was wooded or that it would remain uncultivated, but that the men who conducted farming operations in the scattered homesteads would do so subject to the supervision of the king's officers who patrolled the forest land, and to the laws which protected the animals and timber"—much as in our own National Forests to-day.

"It is unlikely that the Conqueror or his sons destroyed or removed either churches or houses other than the squatters' quarters. If they did so, it was assuredly not for fear of any interference with the game but for high reasons of state to prevent this district between Winchester and the easy landing places in the Solent from becoming the place of meeting for foreign enemies and traitors at home."

Mr. Jeudwine has treated of the forests chiefly in a chapter devoted to the sources of revenue, and he seems to have successfully maintained that they were first of all valued because of

the revenue which they yielded both to the Crown and to the people, while severe administration was necessary for the protection of the kingdom.

PACIFIC NORTHWEST FIRE PROTECTION

WITH about 800 patrolmen already in the field, to be supplemented steadily from now on, and with trail and telephone building being pushed rapidly, the forest protective agencies of the Pacific Northwest commenced the fire season of 1913 with more thorough preparation early in June than in any previous year, according to reports received from all such agencies by the Western Forestry and Conservation Association. Although it was a wet spring, without fires in standing timber so far, these same conditions have retarded the cleaning up of slashings and similar fire-traps, and it is also feared that the law of averages will result in a dry summer. Fire officials particularly urge the greatest care with slashings and right of way clearings from now on to prevent fires from escaping or lingering to spring up later. Any burning hereafter until October 1 must be with permit from a fire warden.

Private patrol associations have greatly extended their acreage since last year, particularly in Oregon, where the last legislature passed a compulsory patrol law. New legislation in California is expected to have the same effect. For the first time, all of the Northwestern States will profit fully by the Weeks law, under which the Federal Government contributes to State patrol. In Idaho and Washington the principal railroads are clearing their rights of way of inflammable debris and vegetation. Considerable complaint is made, however, of county road supervisors and contractors who allow road-building debris to accumulate in defiance of law. Loggers are reported more interested in fire pre-

vention than ever before and are generally following the suggestion of patrol associations to post rules around their camps instructing employees in precautions and in steps to be taken if fire breaks out. In many cases camp superintendents are being instructed to turn their forces over to fire wardens on demand, without awaiting instructions from proprietors, since fire prevention is set ahead of getting out logs.

Features of this year's protective work will be great activity by the Government and the timber owners' patrol associations in extending telephone and lookout systems and the perfection of much closer co-operation between private, State and Federal systems under agreements for division of patrol territory and fire-fighting expense. It is estimated that not less than \$1,635,000 will be spent for forest protection by all three agencies in Montana, Idaho, Washington and Oregon, distributed, approximately, as follows: State appropriations, \$100,000; timber owners' associations, \$250,000; forest service, \$1,250,000; Federal Weeks Law fund, \$35,000. Should it prove a bad year, the private expenditure, not being restricted like the others, may be much greater. It was about \$700,000 in 1910.

In their reports to the Western Forestry and Conservation Association all these agencies, in urging public co-operation with their efforts to protect community resources, lay special stress on care with camp fires and burning slashings. It is also asked that all accumulations of inflammable debris constituting dangerous fire traps be reported to fire wardens at once, so that if possible they can be dealt with before it becomes too dry.

BOUNDARIES OF NATIONAL FOREST CHANGED

PRESIDENT WILSON has signed a proclamation eliminating approximately 56,700 acres from the Kaibab National Forest, Arizona. At the same time 36,000 acres were added to the total area of the forest, which now embraces some 1,072,900 acres. The eliminated lands, which lie along the western boundary, west of Kanab Canyon, and north of the Grand Canyon of the Colorado, were found upon examination by forest officers to be of little value for forest purposes. The additions are in the northeastern part of the forest and consist principally of woodland areas which it was desired to include in order to extend the boundaries of the forest to the base of the Buckskin Mountains.

THE GUNNISON FOREST

A proclamation was also signed by President Wilson eliminating approximately 890 acres from the Gunnison National Forest, Colorado. The elimination is the result of a very careful examination undertaken by forest officers, who found that the land had no value for forest or watershed protection. The tract eliminated is less than one and a half sections, and embraces a few rolling hills and level flats along Ohio Creek, northeast of Gunnison. The area will be restored to settlement and entry after having been advertised in the local papers by the Secretary of the Interior.

IN IDAHO FORESTS

During May the President signed proclamations making changes in the boundaries of national forests in the State of Idaho. Approximately 449,000 acres are affected, but more than half of the changes are in the nature of a transfer of land from one national forest to another. An elimination of 18,560 acres was made along the northeastern boundary of the Challis Na-

tional Forest, in northern Idaho. These lands were found upon examination to be of little value for forest purposes. About 40,640 acres were transferred from Challis to the Salmon National Forest and 16,604 acres from the Salmon and 79,360 acres from the Sawtooth were transferred to the Challis, for administrative reasons.

Some 89,520 acres were eliminated from the Lemhi National Forest, which lies directly east of the Challis, and an interforest transfer of 25,600 acres was made from the Lemhi to the Salmon National Forest.

An elimination of 83,630 acres was made from the Salmon to adjust the boundary to the edge of the heavy timber. There was also eliminated 3,040 acres from the Sawtooth National Forest, and a transfer of 79,360 acres was made from the Sawtooth to the Challis.

Approximately 92,000 acres from the Beaverhead and 40,640 acres from the Challis were transferred to the Salmon National Forest and from the Salmon 16,640 acres go to the Challis and 25,600 to the Lemhi. The transfer from the Beaverhead to the Salmon Forest leaves the remaining portion of the Beaverhead wholly in Montana, instead of in Idaho and Montana, as formerly.

The transfers and eliminations were made in each instance upon the recommendation of the Forest Service. The eliminated areas will be restored to settlement and entry after having been advertised in the local papers by the Secretary of the Interior.

THE ANGELES FOREST

A proclamation signed by the President on May 27 cuts approximately 100,000 acres from the Angeles National Forest of southern California.

The area was recommended for elimination by the Forest Service, after a careful examination of the ground. The land is located on the north side

of the forest, in Los Angeles and San Bernardino counties. The altitude varies from 2,900 to 7,000 feet. At the higher elevation the country is steep and rough, but farther down slopes in gently rolling hills and mench lands to Mojave Desert.

The Angeles Forest is chiefly valuable for watershed protection to the south and west, but the lands eliminated are on the other side of the range and therefore of no value in this respect,

according to the report of the Forest Service. A considerable portion of the tract consists of fairly level ground. The soil is a good sandy loam. It is the opinion of the examiners that it has only a small value for forest purposes. A number of homesteaders have already applied for land under the Forest Homestead Act of June 11, 1906. About 14 per cent of the tract is already in private hands and the proportion of listed land, the Forest officers say, is being added to almost daily.

FOREST OFFICERS AS GAME PROTECTORS

AN agreement to co-operate with the State of New Mexico in the protection of game on national forests has been entered into by the United States Forest Service. Negotiations looking toward a similar arrangement with the game wardens of Arizona are under way. On the other hand, the game wardens will report to the nearest forest officer any fires they may discover on or near a national forest.

The present plan is a logical development of the general policy of the Forest Service to help the State authorities in game protection. It specifies more definitely than heretofore the extent of the co-operation forest officers are expected to furnish. In a letter to State Game Warden Trinidad C. de Baca, the Government outlines the proposed activities of Forest Service men in assisting to enforce the game laws of New Mexico, as follows:

Forest officers will pay strict attention to the enforcement of the game laws in so far as their duties permit, by reporting all cases of violation of the game laws to the regular deputy State game warden in whose district an offense is committed. They will make arrests in flagrant cases where it is impossible to notify the deputy State game warden, and where the violator is likely

to leave the section of the country. They will also furnish to the proper officers all available information, which will assist them in apprehending or prosecuting violators of the game laws.

The rangers will further be expected, as far as practicable, to keep a record of the total number of game animals by classes killed in their districts, to be turned in to the State game warden, at the end of the season.

Maps showing the telephone connections of the Forest Service and the headquarters of the rangers will be furnished to deputy State game wardens by forest supervisors.

In case the regular deputy State game warden discovers fire on an area within or contiguous to the forest, he is expected to promptly notify the nearest forest officer of the fact.

The matter of maintaining the game supply in New Mexico and Arizona is being taken up energetically by both these States. On the Carson, Pecos, and Gila National Forests of New Mexico, deer, wild turkey, and, in certain localities, bear may be found, while on the Sitgraves and Apache National Forests in Arizona big game in quantities abounds. In the White Mountains of the Apache and the Black Range of the Gila National Forest is some of the best hunting in the country.

CO-OPERATION FOR FIRE PROTECTION.

The officials of the Yosemite National Park are co-operating with the forest officers of the Stanislaus and Sierra national forests for fire prevention and control in both the park and the forests.

EXTERMINATING PRAIRIE DOGS

AS a detail of its campaign against prairie dogs on the sheep and cattle ranges of the West, the Biological Survey of the Department of Agriculture is using carbon bisulphide in connection with eight tons of poisoned grain for the extermination of the little pests on the ranges of the Coconino National Forest, Arizona.

Generally the Biological Survey works to prevent the extinction of birds and animals. In the present instance it justifies its war against prairie dogs on the principle of the campaign against the bubonic-plague rat and squirrel, or against the rabbit which girdles fruit trees.

The damage done by the prairie dog, it is pointed out, affects the stock-raising industry in two ways. First, many acres are laid bare in the neighborhood of prairie dog villages, and the amount of food available for cattle is proportionally reduced. Second, valuable animals, frequently horses, have to be killed after they have broken a leg in a prairie dog hole.

According to the Department's expert the stock industry has unwittingly favored the increase of prairie dogs by killing off coyotes that prey upon stock

but are also natural enemies of the prairie dogs.

Last year on the Cochetopa National Forest of Colorado fifteen tons of poisoned oats freed some 26,000 acres of grazing land from prairie dogs. On the Pike National Forest, in the same State, seven tons of oats were used to clear 60,000 acres. This year five or six tons of the poisoned grain only was used on the Cochetopa and three tons sufficed for the Pike.

It is estimated that on all the National Forests about 275,000 acres, which had been rendered worthless for grazing purposes by prairie dogs, have been restored to their former usefulness. Since it takes on the average 40 acres to support one cow, or eight sheep, this means a gain in the carrying capacity of the range sufficient to run 6,950 cattle or 55,600 sheep.

In 1908 the government began to carry out this campaign, and in 1911 worked on a large scale; it was so successful that in 1912 the quantity of poison put out was doubled. This year's campaign is one of cleaning up the areas where there was almost complete extermination in 1912.

FORESTRY AND LUMBER MEETINGS

July 7-10—Canadian Forestry Association, Winnipeg, Man. Annual meeting.

July 9, 19—Pennsylvania Lumbermen's Association, Atlantic City, N. J. Summer meeting.

July 16, 17—Montana Retail Lumbermen's Association, Elk's Club Building, Billings, Mont. Annual meeting.

July 22, 23—Directors of American Forestry Association, in conjunction with Society for Protection of New Hampshire Forests,

The Northeastern Foresters, New Hampshire Timberland Owners' Association, New Hampshire Pine Lumbermen's Association, Massachusetts Forestry Association, and New Hampshire State Forestry Commission, at Lake Sunapee, N. H.

August 19-21—National Commissary Managers' Association, St. Louis, Mo. Annual meeting.

November 18-20—Fifth National Conservation Congress, Washington, D. C.

DOGWOOD GROWING SCARCER.

Dogwood, the principal source of shuttles for use in cotton mills, is growing scarcer year by year, and various substitutes are being tried, but with no great success.

FORESTS TO ASSURE PURE WATER

SECRETARY HOUSTON has just approved an agreement between the Department of Agriculture and the town of Safford, Arizona, by which the Forest Service and the town will co-operate to conserve Safford's water supply, which comes principally from the Crook National Forest.

This is the latest one of many such agreements. According to the figures of the Forest Service there are nearly 1,200 cities and towns in the west which derive their water supply from lands within the National Forests. Where these cities desire it the Government joins hands with the citizens for the purpose of maintaining a permanent and pure water supply.

Stock raising, for example, or any other occupancy of the land, which ordinarily would be encouraged, would be inadvisable on a watershed which forms a source of drinking water. The Forest Service recognizes that water is as necessary a commodity for wooded hillsides to supply as are sawlogs or mine props. A watershed area may offer an

opportunity to furnish the greatest benefit to the largest number through supplying an unpolluted source of water for domestic purposes.

Contracts like that just made with Safford are now in force with Cascade, Colorado Springs, Durango, and Manitou in Colorado; Salt Lake in Utah; and Baker City and The Dalles, Oregon. The famous Bull Run watershed, which supplies Portland, Oregon, is on the Oregon National Forest.

The co-operative agreement in each case provides that the land may not be used without approval by the town, except for the protection and care of the forests. The Government agrees to extend and improve the forests by seeding, planting, and forest management, so far as the funds for that purpose are available. The city, for its part, assists by paying the salaries of the additional guards necessary to carry out the agreement, and contracts to bear the greater part of the cost of any improvement work which it considers immediately desirable.

WILL NOT PURCHASE PISGAH LANDS

THE Pisgah forest tract in North Carolina, part of the famous Vanderbilt Biltmore estate, will not be purchased by the government, according to a decision of the National Forest Commission. The commission inspected the tract a few weeks ago. The only reason given for the decision was that "all things considered in connection with the proposed purchase, it was decided best not to take the tract."

The commission has approved for purchase two tracts, one of 3,900 acres in the Mount Mitchell area, western North Carolina, average price, \$5.39 an acre, and another of 2,100 acres in the White Mountain area, New Hampshire, average price, \$4.95 an acre. This makes the total area purchased by the commission since its creation less than three years ago more than 600,000 acres.

40,000 ACRES FOR A FORESTRY RESERVE.

At a recent meeting of the Public Domain Commission of Michigan it was decided to set aside 40,000 acres of land in Luce County for a forestry reserve. Watch towers will be constructed, fire lines will be built, and men will be engaged to police the new reserve. With the addition of this tract the State now owns 100,000 acres of forest reserve land.

THE SWEDISH INCREMENT BORER

THE forester, in order to judge the condition or growth of a forest, has two methods of procedure. One is to fell a number of trees and examine the annual growth rings as shown in the cross section, the other is to use the increment borer to extract cores from standing trees. The latter method is naturally much to be preferred because it does not require the sacrifice of the tree in order to examine the growth rings, as the wound made by the borer quickly heals when properly filled. Until recently, however, the increment borer did not give satisfactory results because cores taken with it were relatively short and could seldom be extracted from the borer without breaking.

These disadvantages have been overcome with the advent of the Swedish Increment Borer. With this tool, perfect, smooth cores of any length up to 8 or 9 inches, depending on the size of the borer used may be obtained for examination.

The borer consists of three principal parts: the handle, the auger, and the extracting needle. The handle is made of a piece of heavy steel tubing fitted with brass caps and a central collar. This collar, together with the steel tube, is pierced with a square hole to receive

the shank of the auger. One of the brass caps is removable and serves as a handle for the extracting needle. Handle and auger are securely fixed together when in use by means of a spring clip. When the borer is not in use, the auger and extracting needle are placed within the handle, making the tool very compact and portable.

The auger is made from the finest steel. The tip is tapered to an annular cutting edge and fitted with a screw which carries the auger into the wood when a boring is made. Directly behind the screw thread are three sets of cutters which rout away the stock, and reduce the friction between the wood and the steel. The auger is hollowed to permit the core to pass in as the tool is screwed into the wood, enough room being allowed for the insertion of the extracting needle between the core and the inside wall of the auger.

The extracting needle is a piece of fine drawn steel, half-round in form. The flat side is serrated to facilitate the removal of cores from the auger, while the round side is graduated in centimeters and millimeters and serves as a scale for measuring the widths of the increments on the core. The brass cap is threaded and is screwed into the handle when the tool is not in use.

A FIFTH PROFESSOR OF FORESTRY AT CORNELL

AT their June meeting, the Trustees of Cornell University established a fifth professorship of forestry. Prof. Frank B. Moody, associate professor of forestry in the University of Wisconsin, was appointed to fill the position.

Professor Moody graduated from the Department of Forestry in the University of Michigan, in 1906. He was assistant State Forester of Wisconsin,

from 1906 to 1912, at which time he became a member of the faculty of the University of Wisconsin.

Professor Moody begins work at Cornell at the beginning of the college year in September. He will have charge of university extension work in forestry throughout the State, and at the University will teach the course on the care of the farm woodlot.

ALASKA TIMBER FOR PAPER PULP

BIDS have just been received by the Forest Service for 300 million feet of timber which has been advertised for sale on the Tongass National Forest in Alaska, and an additional 300 million feet from the same forest has been applied for. A large part of this timber is Sitka spruce, which will be made into paper pulp not only for the Pacific Coast and the Orient, but for the general pulp market. The latest estimates available show that there is a stand of approximately 70 billion feet on the Tongass National Forest and approximately 28 billion feet on the Chugach National Forest in Alaska. Recent investigations have shown this amount to be very much larger than was supposed. The Alaskan Forests in fact contain approximately one-sixth of the total stand of timber on the national forests. The annual cut on the Tongass Forest has increased gradually from zero at its creation in 1902 until it amounted to approximately 43 million feet in the year 1912. This entire amount has been cut for local uses, largely for boxes to contain canned salmon. The latest large sale is remarkable in that it indicates a beginning of the utilization of Alaskan timber in the general market.

On the area on the Stikine River, for

which bids have been received, the species to be cut include Sitka spruce, hemlock, red cedar, cottonwood, and yellow cedar, and the minimum stumpage rates range from \$2.50 to \$1.00 a thousand feet, according to species, the yellow cedar bringing the highest price. Another pulp company has made application for the other area, at the head of Thorn Arm, which contains the same species to be sold at similar prices. This company has had men examining timberlands in Alaska during a long period and over large areas, and has come to the conclusion that the Tongass timber offers the best opportunity it has seen.

The three great advantages which the paper manufacturers say they are finding in Alaska are abundant supplies of timber, cheap hydro-electric power, and tide-water transportation—all of these in one and the same locality. Both areas adjoin deep water, and it is probable that the plants will be so located that ocean freighters can be loaded right at the mills.

A cutting period of twenty years will be allowed, with two years additional for construction work. The prices may be adjusted at five-year intervals to take care of possible advances in lumber values.

SUMMER RANGE FOR SHEEPMEN

SPRING droughts in the West have made forage scarce in certain sections and the summer may prove serious for the grazing industry. As a means of relief unused grazing areas on some of the National forests have been put at the disposal of stockmen living at a distance, in cases where it will pay them to ship stock in by railroad for a summer grazing season.

The District Forester at Missoula, Montana, has issued a prospectus outlining the grazing possibilities on the

forests under his jurisdiction. According to this statement there are unused areas in the national forests of northern Idaho and western Montana which are capable of supporting a large number of sheep. The forage, as a rule, consists mainly of weeds and browse. Water is abundant.

These ranges are more or less inaccessible and are available only for the summer grazing season, which extends from June or July to October and November. There are no winter grazing areas nearby and the character of the

land does not permit of raising feed in quantities sufficient to keep cattle through the winter.

The expense of shipping sheep in by rail and removing them before snow falls is not, according to the Forest Service, prohibitive, especially in cases where home ranges are barren and where a considerable number of a stockman's sheep might be expected to die of starvation during the summer. Sheep owners in eastern Washington

have before now sent their flocks by rail into Idaho and Montana, sometimes having them returned home and at other times shipping them through to the East in the fall. One company shipped from Casco, Washington, to Cabinet, Idaho, securing a rate of \$40 a car in 10 carload lots, or a total shipment charge, coming and going, of 25 cents a head. About 400 sheared sheep can be loaded into a car when going to the range, and 250 when returning.

PUBLICATIONS RECEIVED

The University of Washington Forest Annual, published in June, is full of interesting forestry news and special articles on forestry. It contains a history of the club, together with an outline of the year's activities and a description of the organization of the college of forestry. There are several excellent pictures of the school, the class members, and the instructors.

Charles C. Deam, secretary of the Indiana State Board of Forestry, has distributed the twelfth annual report of the board in a paper-bound volume of 180 pages, with many good illustrations. The report tells of the progress on the forest reservation, of the year's work of the board and contains special chapters on woodlots, shade trees, growth of white ash, and the study of forestry in the schools of the State.

State Forester F. W. Besley, of Maryland, has issued a pamphlet on the Forests of Prince George's County, which constitute one of the chief sources of the county's natural wealth. The report, well illustrated and containing valuable maps, is based on Mr. Besley's survey of the county in 1907.

The fourteenth annual report of the Canadian Forestry Association, a volume of 138 pages, makes its appearance just prior to the annual meeting of the organization, which is to be held in Winnipeg July 7 to 10. It contains a detailed report of the convention at Victoria last September and the business meeting at Ottawa last February.

The Park Commission of Fitchburg, Mass., has just published its report for 1912, and includes with it the annual statement of the superintendent of gypsy and brown-tail moth work for the city. The report is amply illustrated and is decidedly interesting.

The North Woods, the monthly publication of the Minnesota Forestry Association, contains several interesting articles, notably a call to arms by Governor Eberhart, who asks the citizens of the State to do their duty in endeavoring to prevent forest fires.

Tree Surgery and The Training of Tree Surgeons are two handsome pamphlets issued by The Davey Tree Expert Co. (Inc.), of Kent, Ohio, and designed and printed by the McFarland Publicity Service, of Harrisburg, Pa. They tell of the opportunities of tree surgery as a profession, of the training necessary for a full knowledge of the art, and of the work of the Davey Institute of Tree Surgery, all in a most interesting and instructive manner.

"Wood and Forest," by William Noyes, of Teachers College, issued by the Manual Arts Press, of Peoria, Ill., price \$3.00, is a comprehensive and authoritative reference book treating of wood, its structure and properties, with chapters on the forest organism, the natural enemies, the exhaustion and uses of the forest. It gives a detailed description of sixty-seven of the principal species of North American woods, with maps of the habitat, leaf drawings and photographs and micro-photographs of sections. The book contains a complete bibliography of books and articles on the subjects discussed, together with a carefully compiled list of references at the end of each chapter. There are 475 illustrations, principally half-tones, and 309 ges.

The June number of *The Pine Cone* continues the excellent arguments in favor of the use of white pine and also devotes considerable space to endorsements of creosoted wooden blocks for paving, giving the opinions of a number of engineers who consider it superior to any other material used for that purpose.

STATE NEWS

Massachusetts

Secretary Reynolds, of the Massachusetts Forestry Association, reports:

"We are in the midst of our busy season locating foresters in various sections of the State for the summer campaign in Branch Association work. Arrangements have been made for men from the Forestry Departments of Harvard, Yale and Syracuse Universities, and from Pennsylvania State and Massachusetts Agricultural Colleges. Several of our old men will be with us again this summer and we expect to have about fourteen foresters in the field.

"The Salem and Dedham Branches of this Association have been organized in the past month, and our membership is now creeping close to 2,700.

"The meeting of the Association held in Springfield on the subject of State Forests was our first step toward procuring State Forests for Massachusetts. Hon. James S. Whipple gave his interesting and instructive address on State Forests, which included much personal experience in that work in New York while Commissioner of Forests, Fish and Game. A bill will be presented to the legislature at the coming session asking that provision be made for the establishment of State forests on the principal watersheds in the State and in the waste territory on the Cape. This movement is supported by other organizations throughout the State and the interest is becoming more and more general.

"The Association held a delightful field day in the woods of the Harvard Forest School at Petersham on Memorial Day. Informal talks given by the professors of the Harvard Forest School furnished our members considerable information on practical forestry. The experiments and demonstrations which the school is working out in its three large forest tracts are well worth seeing by the layman as well as the forester or lumberman. The outing proved to be a great success and was enjoyed by many of our members. We hope to make this outing an annual affair.

"Our committee on legislation has been successful in obtaining favorable action by the legislature on two very important measures. A bill providing for a commission to make a special study of the forest tax problem in this State has just passed the legislature and this commission will frame a bill on forest taxation particularly suited to conditions in Massachusetts. By the revision of an old statute, the towns and cities in Massachusetts now have the right to acquire land on which to establish and operate municipal forests. It is expected that with this law, our branch associations will be enabled to

have their respective towns and cities buy and reclaim much of the now wild and waste land in the State. The great problem of reclaiming a million acres of nearly one-fifth of Massachusetts is before the people and it remains with them to utilize the opportunities which have been given them by this legislation."

New York

There has been during the present spring season a decided drought in the Adirondack and Catskill section, and reports which have been received at the office show that about 9,800 acres of land were burned over, nearly all of which was denuded or brush.

The legislature which has recently adjourned, appropriated \$100,000 for forest-fire protection, \$40,000 for reforestation, \$10,000 for general forestry work, in addition to the regular salaries of the foresters and regular employees of the commission.

During the spring season 6,560,000 seedlings have been transplanted in the nurseries and 3,969,000 trees sold to private owners, in addition to 70,000 which were planted on State land. This quantity is in addition to the large number of sales and planting on State land which occurred last fall.

A large number of applications have been received by the commission for exemption or reduction in assessment of reforested woodlots in this State. Examinations are now being made and there seems to be a decided interest in this recent forest legislation.

The owner of about 600 acres of forest land in Herkimer County, which he purchased under a deed which required that the land should be used for hotel, cottage and permanent forestry purposes, has applied to the Conservation Commission for instructions as to how he can lumber this land so that it will continue to be used for permanent forestry purposes. An examination of this land will be commenced at once, and on account of the character of the forest growth, its location, etc., there is an excellent opportunity to make a practical demonstration of proper handling of Adirondack forest lands.

Michigan

The Forestry Department of the University of Michigan has been unable to furnish men for all the positions offered, even though the school is now larger than ever before. The demand for competent foresters seems to increase faster than the supply, in spite of the predictions of many persons who have, seemingly, been in positions to

gauge the situation. It is interesting to note that a greater proportion of graduates are finding places with private concerns than in past years, though, of course, many are still going to the Forest Service.

It seems likely that this demand for foresters is a more accurate measure of the growth of the forestry idea than any other method of estimation.

Kentucky

The work of the establishment of a forest nursery at Louisville, Ky., is under way and a water system is rapidly being provided. This State nursery, together with a demonstration forest and transplant beds, will form part of a permanent exhibit at the State Fair by means of which it is expected to arouse an interest in reforestation throughout the State. The State Forester has been made superintendent of the forestry and mineral exhibits at the State Fair, and it is expected that at the next State Fair, which will be held during the week beginning September 15, there will be an adequate presentation of the forest and mineral resources of the State. Kentucky is rich in both forest and mineral products and there has heretofore been no adequate representation of forest and mineral industries at the Fair.

A movement will be initiated very shortly to organize a Kentucky State Forestry Association on the line of similar organizations in other States. This movement will be put on foot at a meeting of the Kentucky Federation of Women's Clubs, which will be held at Middlesboro, Ky., beginning June 10, at which meeting the State Forester will make an address.

Mr. J. G. Peters, of the office of State Cooperation of the Federal Forest Service, was recently in Frankfort to confer with State Forester J. E. Barton and the members of the Committee of the State Board of Forestry with regard to the proposed co-operative agreement between the State and the Forest Service under the terms of the Weeks law. It is expected that this agreement will be in operation very shortly.

Vermont

The annual meeting of the Vermont Forestry Association was held in Burlington, May 27, in connection with a meeting of forest-fire wardens. Among the speakers were Mr. John M. Woods, of Boston, on "The Grading

of Lumber;" Mr. Fred J. Caulkins, on "The Work of the Massachusetts Forestry Association;" Mr. Craig Burt, on "Lumbering in the Green Mountains," and His Excellency, Governor Fletcher, President of the Association, on "Progress of Forestry in Vermont." The officers elected for the ensuing year are as follows:

President, Governor Allen M. Fletcher; vice presidents, Charles Downer, Ernest Hitchcock; secretary and treasurer, Mr. Craig O. Burt, Stowe, Vt.; advisory board, Hon. Jos. Deboer, Charles Green, Ralph W. Putnam, A. F. Hawes, Levi Smith.

The resolutions passed by the Association are as follows:

1. We heartily commend the action of the recent legislature of Vermont in the passage of progressive forest tax legislation; in providing for the purchase of demonstration State forests, and in improving the machinery for the prevention of forest fires.

2. We congratulate the State on the wide interest that is being taken by farmers, lumbermen, and others, in reforestation, and the fact that over two million trees have been planted by private owners during the past five years.

EXTENSIVE OPERATIONS PLANNED.

3. The present tendency of prices of hard wood lumber encourages extensive lumbering operations, and such are now contemplated on a scale hitherto unknown in Vermont. The perpetuation of our mountain forests is of vital importance to the existence of many of our industries, to the preservation of our scenic attractions, to the maintenance of stream flows. Hence, we urge the State legislature to adopt measures looking toward the perpetuation of these mountain forests through their wise use, either by the purchase of extensive State forests, or the creation of private protective forests similar to those existing in certain parts of Europe.

4. Realizing the grave danger to the cause of conservation should the national forests be transferred to the various States in which they are situated, we protest against the recent action of the legislature of Colorado in attempting to have this property of the whole nation, valued at over two billion dollars, donated to a few States. We strongly urge our Representatives in Congress to exert their influence for the maintenance of the national forests, believing that through Federal control only can this great timber wealth be protected from special interests and rapid destruction.

PLANTED 200,000 SCOTCH AND WHITE PINE.

Mr. O. W. Madden, who has had field charge of the planting of 200,000 Scotch and White pine transplants in Hamilton County, New York, for James W. Sewall, the timber man, of Old Town, Maine, has completed that work, and taken a crew into northern Maine for Mr. Sewall, on an exploring and surveying trip.

THE PRODIGAL

By JACK WELCH

I was tired of the silence and grandeur,
Of the solemn, unchanging hills,
Where the only echo of music
Was the splashing of mountain rills.
I heard in my dreams in the cabin,
Lonely, and lonesome, alone,
The hum of the far-away cities
Insistently calling me home.

I dreamed of the restaurants and dancing,
The avenues' pomp and display,
The whirr of six-cylinder autos;
The lights on the lighted way.
The stillness; the gloom of the fir trees,
Obsessed and oppressed me the more
As I thought of waste years in the back-
woods

Which the future could never restore.

Then I threw up my job in the Service,
Pulled stakes and trekked back to the towns;
Turned in my badge and my transit;
Turned my back on my daily rounds.
The restless go-fever was on me,
I wanted a change—which I found,
For I landed a place in an office
With a shaky typewriter to pound.

Now I dream in a twenty-tier building
Of the men and the days back there;
The work that was always man's work—
The tang of the mountain air.
These are pretty good fellows

As men in the cities go;
But those clear-eyed, weather-bronzed
rangers
Are the sort I'd rather know.

My muscles are loose and lazy;
Tobacco tastes bitter and stale.
Lord, it was good on the hazy,
Damp days on the Darrington trail!
The fire glows again by the river,
The mandolin tinkles at night,
The packer comes up with the mail sack—
(Which weighs altogether too light!)

I've learned as naught else could have
taught me
The depth and the breadth of it all;
That a "snap" isn't just what I thought it;
That the payment is petty and small.
Not in money, perhaps, but in pleasure,
Satisfaction in **work well done**;
The thought that **you've given full measure**
Counts more than cash easily won.

So I think I'll go back to the Service;
I'm sick of this routine work.
The monotony's driving me loco;
I wasn't cut out for a clerk.
Out there where the Ranges are waiting;
Out there where life's really worth while;
Out there in the limitless open
There's a job that is more to my style.

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